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THE

POULTRY YARD:

HOW TO FURNISH AND MANAGE IT.

A TREATISE

FOR THE

AMATEUR POULTRY BREEDER AND FARMER

ON THE

MANAGEMENT OF POULTRY

AND THE

MERITS OF THE DIFFERENT BREEDS.

BY W. ATLEE BURPEE.

FIFTEENTH EDITION.

1897.

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PREFACE.

In presenting this edition of the POULTRY YARD to our patrons and readers we have endeavored to make a number of valuable additions, especially in the art of caponizing, which is becoming so popular in this country. We have endeavored to discard theory, and present facts derived from the experience of those thoroughly posted. We lay no claims to entire originality in this work. All breeders meet with much the same experience, and it has been our aim to compile from all reliable sources a concise treatise, at a low price, giving instructions to beginners. We have not attempted an elaborate description of the breeds of poultry, only endeavoring to state their respective merits and demerits, and thus enable every amateur to answer for himself the oft-repeated question, "Which breed pays the best?" We would express our indebtedness for valuable hints, especially to *The Poultry World*, *Wright's Illustrated Book of Poultry*, MR. W. H. WIGMORE, and *Fancier's Journal*.

We have also introduced in this edition more illustrations and fuller descriptions of the new breeds, information much sought for by hosts of farmers and new fanciers, whose attention is constantly being awakened to the value of improved fowls.

THE POULTRY YARD:

HOW TO FURNISH AND MANAGE IT.

POULTRY HOUSES.

WHEREVER practicable it is preferable to allow fowls entire liberty. Thereby they have abundant muscular exercise, can range at will over wheat stubbles, gathering many a worm, and are kept in the highest degree of health. When thus kept, as is the general custom of farmers, they must not, however, be allowed to "shift" for themselves, roosting on the trees or wherever they choose. No well-to-do farmer would allow his sheep or pigs to run at random, without proper stabling or pens. It is none the less necessary to success in raising fowls that the same attention should be paid to them. It does not pay to constantly clean up the implements, wagons, etc., on which the fowls have passed the night. A farmer cannot afford to lose the droppings of his fowls, as there is no more valuable manure in the world. A thrifty breeder cannot afford the time to hunt over hay-mows, under pig pens, and among shrubbery, for hens' nests—perhaps only to find the eggs spoiled by incubation. For these and other evident reasons, poultry should have a house set apart especially for their wants. They do not require a large or expensive building. A building ten or twelve feet square is large enough for a flock of twenty fowls. The building should be about seven feet in height, and should face the south. The roof should be perfectly water-proof, and the sides free from any cracks or crevices to admit draughts of air. The front, if in a warm climate, can be made of slats, when abundant ventilation will be allowed. If the winters are severe it should be entirely closed in front, excepting a small hole for the entrance and exit of fowls, and a suitable opening for ventilation at the top. This latter can be accomplished by simply boring a considerable number of auger holes near together, or leaving an opening protected by slats arranged after the fashion of Venetian blinds. A suitable door must, of course, be made, for the entrance of the keeper. The house must be situated upon high ground, and the floor always dry. Many styles of poultry houses are in use, of which we give numerous plans hereafter, including those used at Fordhook Farm. For half a dozen fowls a very small house only is necessary. Unless

protected, the entrance hole for the fowls will admit a great deal of cold air. For the following simple arrangements we are indebted to the *Poultry Nation* :—

"Place a box in front of the outlet, tight up against the side of the house, leaving a hole at either end, next the building. Slanting a board from the ground to the top of the box in front of the hole, to break the wind in that direction, you have a house as near wind-proof as though it were entirely closed. If possible, pile manure, straw, gravel, or anything you might happen to have handy, around the box, thus keeping the wind out of the cracks, and making the house warmer."

The interior of the house should be fitted up with roosts and nests. The roosts should all be on the same level, to prevent fighting for the highest place. They should not be more than eighteen inches or two feet from the ground for large fowls, and should be sufficiently wide. A good plan is to arrange the nests on the floor, under the roosts, protected by a board which will collect the droppings, and which can be readily scraped off. When we published the *American Fanciers' Gazette*, we received a communication on nesting places, from an experienced fancier, under the *nom de plume* of "Amateur," from which we give the following extract :—

"In almost every plan for the construction of a poultry house an elaborate row of boxes is introduced, cunningly devised with a darkened rear passage, favoring the secrecy which mistress Biddy, it is well known, takes delight in, and who, once ensconced therein, finds everything lovely and serene. But there is one fatal objection to this symmetrical arrangement, according to my experience, which is this—the liability of mistaking the nests, and the confusion and loss resulting therefrom.

"I have adopted, for years, the plan of having movable boxes placed on brackets, elevated from one to three feet from the ground. They should be painted in different colors, if possible, so that the hen can easily distinguish her own from others. Nothing could induce me to return to the plan of stationary boxes, as my losses from mistakes have been next to nothing since I adopted this plan of movable nests. A cover of coarse wire netting placed over the setting hen during the first few days of incubation will prevent any disturbance afterward, almost certainly."

If the fowls are kept in confinement, or have no other shelter, they should be furnished with a covered run for wet weather. *Cleanliness* is all important, and it is *foul* management indeed to allow a stench to arise in the fowl house, rendering the very air the fowls breathe impure, and creating the presence of the chickens' mortal enemy—vermin. The roosts should be scraped, the droppings removed, and a little fresh ashes, gravel, or loam strewn on the floor every morning. Also the nesting material should be changed whenever occasion requires. The interior of the house, the nests, and the perches should all be thoroughly whitewashed every spring and fall. No harbor should be presented for vermin, and the air must always

be pure. If fowls are confined in a yard the ground should also be frequently raked, and occasionally dug or plowed over.

In constructing the nests we have already mentioned, it will be well to remember that several hens will frequently lay in the same nest, and consequently a smaller number of nests are necessary. Hens should not be set in the roosting and laying house. Some writers recommend a separate house for setting hens, and where poultry are raised in very large numbers this, doubtless, is desirable, but for the ordinary farmer is entirely unnecessary. The hens can be set on the hay-mow, in the barn, wagon house, an unused stall, or any place where they will be quiet and undisturbed.

In breeding several yards of fancy poultry, the usual plan is to make a straight house with yards extending out the entire length, and separated by slat fences. This will answer, but is open to the objection that the cocks will occasionally fight through the rails unless the fence is solid at the base, and if ever one slat should fall off, woe to the pure breds! A very simple plan for a breeder of several varieties is to give them each a small, separate house and yard, situated in different parts of the ground. When the yard space allotted is very small, a movable fence can be used, and then the fowls can at any time be transferred to fresh pasturage.

SELECTION AND MATING OF STOCK.

In selecting fancy stock, of course the standard must be followed, and only the best and most nearly perfect specimens of their kind retained, *provided they are all suited to each other*. No hen should have the same faults as the cock. If one is faulty in a certain point, the other should be especially good in that particular, so as to counteract the bad impress upon the offspring. Experience with each breed must teach the fancier the best birds to retain for breeding. Often a bird that is not up to the standard, and sometimes even a disqualified bird, is desirable in the breeding yard, nay, of the highest importance; for instance, in breeding Leghorns, a straight comb hen is invaluable to raise the finest and most erect combs on cockerels. So a spotted-breasted Dark Brahma and Brown Leghorn cock will produce the most beautifully penciled pullets. We remember seeing a communication in one of the poultry journals, by the late Mr. J. W. P. Hovey, in which he stated the case of a friend who ordered a trio of Brahmas, at a high price, *mated for breeding*, from a celebrated English breeder, and who was disgusted at receiving a poor-looking trio of birds, whose equals *in looks* could have been purchased anywhere at $2.00 a head. But appearances are deceitful, and *blood* will tell, as was proven by the result. From that trio sprung noted prize birds. And so it is, the skillful breeder knows how to mate his birds to produce the best offspring. Amateurs, in starting, make a great mistake in purchasing exhibition birds (as birds *matched* for exhibition are seldom rightly *mated* for breeding), or in purchasing low-priced

birds from unknown sources. The best plan is to send the price of a pair or trio of breeding birds to a responsible breeder, who has a reputation to maintain, and state plainly that you want birds whose *progeny* will speak their praises. In nine cases out of ten you will be satisfied, not only in the birds received, but in the chicks they breed. In mating fowls, it is generally believed the hen affects mostly the size and form, and the cock the plumage and markings of the chicks. If a choice can be had, it is preferred to mate a cock (over one year old) with spring pullets. Be sure you select a good, vigorous cock, and the one who is the "boss rooster." One cock will readily serve eighteen or twenty hens of the large breeds, and twenty-four to thirty hens of the small breeds.

This has been our experience, and we first expressed our views on this subject in an editorial in the *American Fanciers' Gazette.* Instead of meeting the opposition we might have anticipated from "book fanciers," who had followed the laws of four to six hens to one cock, as laid down by other authors, we received several long letters giving experience strongly confirming our own. A good cock with a small number of hens will only worry and annoy them, often injuring them. With a large number of hens, as stated, some of the hens will, of course, generally be sitting. This ratio of hens applies to small flocks of fowls; where the number is multiplied there should be a rather less proportion of hens, as the majority of the work will devolve upon the "cocks of the roost." In selecting the hens, those of the greatest utility only should be used. If layers are desired, prove by actual count which individual hens lay the most eggs, and retain them. If size and early maturity, select the fowls most nearly perfect in these respects. Remember that *fat* is prejudicial to health and success with breeding fowls. It is not *weight,* but a large form, a *capacity* to take on flesh, that makes large chicks. See to it that the fowls do not breed large legs and necks; look to the greatest development of the most palatable parts. Raise fowls of bright yellow skin and legs. These latter remarks are especially intended for the market poulterer, and we will only add, that no one can realize the great improvement possible, even in "dunghills," by following up the "survival of the fittest." We cannot make monkeys into men, life is too short for that, but we can vastly improve the condition and value of our poultry. One of our farmers, by a course of judicious mating and selecting of mongrel breeding stock, so well established a strain of large, well-bred fowls, that he was able to dispose of his surplus stock to dealers at $5.00 a pair. There is no need of the farmer of to-day wasting tedious years in the improvement of his barnyard fowls, when for five or ten dollars' outlay in the purchase of a cock or pair of pure-bred fowls he can avail himself of the labor of others for many years. Poultry should not be bred in-and-in too much, but judicious in-breeding, to a certain extent, is necessary to establish a fixed type or peculiar strain. For ordinary farm use, we would recommend the introduction of a thoroughbred

cock of fresh blood every second year. Farmers cannot realize what a wonderful improvement a thoroughbred cock will make in a flock of mongrel hens. It will not hurt to make one cross of father with daughter, or of son with mother and half sisters. It is best to kill all hens when two and one-half years old, as soon as they begin to moult. After that the supply of eggs falls off greatly, and it does not pay to keep them. They can then be sold at a fair compensation. Do not count your chickens before they are hatched, is a wise injunction, but none the less will an intelligent breeder desire *to count his chickens before they die,* and to do this with profit, the breeding stock should be slaughtered for market at the age already named.

We will conclude our remarks on mating by the following extract, written by us for the *American Fanciers' Gazette,* August, 1875:—

LUCK IN MATING.—So much has been said and written about *science in breeding,* that we propose, by way of variety, to briefly call the attention of our readers to the intervention, oft-times, of *luck* in mating. We do not class ourselves among the believers in mere luck, nevertheless it must be acknowledged that birds mated on the same system (or oftener, perhaps, *lack* of system) will and do produce diverse results. This, when looked at in one light, is not luck, but the rational results of nature's own laws. However, as far as the breeder is concerned, it is bound to prove either a *lucky* or an *unlucky match.* For instance, two birds are selected which are as near approaches to perfection as the art and skill of the breeder has attained unto; they are mated, and in some cases the offspring will be satisfactory, in others (and the chances are about equal) they will be most unsatisfactory, the products coming worthless, as mongrels. Now, this can be explained in some cases by the assumption (if the birds were of different but unknown strains) that the strains of which they are members had been bred for different results, and the one still possessed the fault which had just been eradicated from the other, but of which a tendency remained. Then these two birds possessing an inherent inclination to like faults, the offspring come possessed of those faults to a double degree. Again, the strains being bred for diverse purposes, all the breeder's pains are crushed to the ground by this sudden union, and nature will advocate its power. Now, on the other hand, if these birds are differently mated, they may *luckily* be paired to suitable birds, and then become the progenitors of worthy offspring.

All that we have just now said shows that there is at bottom, in such cases, although the breeder may be ignorant thereof, a natural cause for these *lucky* or *unlucky* results. That such, beyond doubt, is the fact, in nine cases out of ten of the varied results of promiscuous matings, we are ready to acknowledge. But, on the other hand, the experienced breeder has or doubtless will come across cases which can be explained upon no such ground. Despite all his care and *system* in breeding and mating, results (we do not mean an occasional exceptional bird, but *regularly*) contrary to

the skilled breeder's expectations will crop out. And then, when the same birds are mated to other birds of the *same blood* as the previous matings, and having like defects and "fine points," vastly different will be the results. Not only so, but we have known different cases of two birds, upon being mated together, proving entirely sterile and unfertile, while both of these birds, being put to different mates, were perfectly capable of reproducing sound and healthy offspring. We could particularize cases which might more vividly illustrate the point at issue, but as we have already consumed considerable space, we do not think it necessary, as we can vouch for the truth of the above statements.

WHAT AND HOW TO FEED.

It is the general habit of Americans to give their poultry corn, corn, corn, morning, noon, and night. This may answer when the fowls have the unlimited range of a farm, and can constantly pick up insects, grubs, worms, etc., together with scattered grains around the barn floor, but even then it is very unwise. In confinement fowls would soon die on this diet. Corn is too heating and fattening for breeding purposes. Fowls should be fed *regularly*. They will soon learn the accustomed hours, and will employ the intervening time in hunting for worms, dusting and exercising themselves. Where they are at liberty, or have a large run, two feeds a day, morning and evening, are sufficient. It is best to make the morning meal of soft food; that, being most readily assimilated, will the sooner appease their empty stomachs and break the fast of the night. Boiled potato peelings, vegetables, and scraps, mashed up with slightly scalded bran or meal, with a little salt mixed, is an excellent dish for fowls. In winter, a little pepper will be valuable as a seasoning.

As a soft food, the *Poultry World* recommends a warm compound of two-thirds wheat bran to one-third meal, wet with skimmed milk. This food has a good egg-producing effect. The bran does not tend to fat, and the milk is even better than meat in the production of eggs. Fowls may eat too much meat, but milk they may drink *ad libitum*, and those who have it cannot put it to a more profitable use. Fowls should have, like human beings, a goodly *variety* of feed. Scraps from the table are highly relished. Grain should be fed at night, as it will remain in their crops longest. Corn is the best staple for cold weather, as it is very heating, and keeps the fowls in fine condition; but it should not be fed constantly in summer. Barley, buckwheat, oats, wheat screenings, cracked corn, rice, etc., are all excellent for a variety. Sunflower seed is invaluable for poultry, and can be grown as cheaply as corn. The Mammoth Russian is the best and most prolific. Single heads which we raised will measure one foot in diameter, and are well filled with an immense number of large, plump seeds. Breeding fowls must not be over-fed nor stuffed, but only kept in good

working order. Beef scraps can be bought cheap, and are highly beneficial, in winter especially; also occasionally a boiled sheep's or calf's pluck, chopped up, is recommended. In concluding our remarks on the feed of fowls, we cannot do better than append Lewis Wright's valuable table of the respective constituents of the various grains, etc., generally used for poultry, from which intelligent poulterers can draw their own conclusions:—

There is in every 100 parts by weight of	Flesh-forming Materials, Gluten, etc.	Warmth-giving and Fattening Material, viz.:		Bone-making Materials, or Mineral Substances.	Husk or Fibre.	Water.
		Fat or Oil.	Starch.			
Beans and Peas, . .	25	2	48	2	8	15
Oatmeal Middlings,	18	6	63	2	2	9
Thirds or fine Sharps,	18	6	53	5	4	14
Oats, ...	15	6	47	2	20	10
Wheat, ...	12	3	70	2	1	12
Buckwheat, . . .	12	6	58	1½	11	11½
Barley, ...	11	2	60	2	14	11
Indian Corn, . . .	11	8	65	1	5	10
Hempseed, ...	10	21	45	2	14	8
Rice, ...	7	A trace.	80	A trace.	...	13
Potatoes, ...	6½	...	41	2	...	50½
Milk, ...	4½	3	5	¾	...	86¾

On most farms both fowls and ducks are allowed to run together, hence, it is sometimes desirable to feed the one and not the other. The *American Agriculturist* suggests the following ingenious plan:—

"The fowls can be readily fed by putting the feed on boards slightly elevated from the ground; the ducks seldom attempt to fly up. To feed the ducks and not the fowls, a large flat pan should be procured and several bricks placed in the middle, in order to keep the food around the edges. Then a large inverted box or tub should be covered over the pan, supported by a brick in each corner. The ducks, by the flexibility of their necks, are enabled to feed, while the fowls can get nothing."

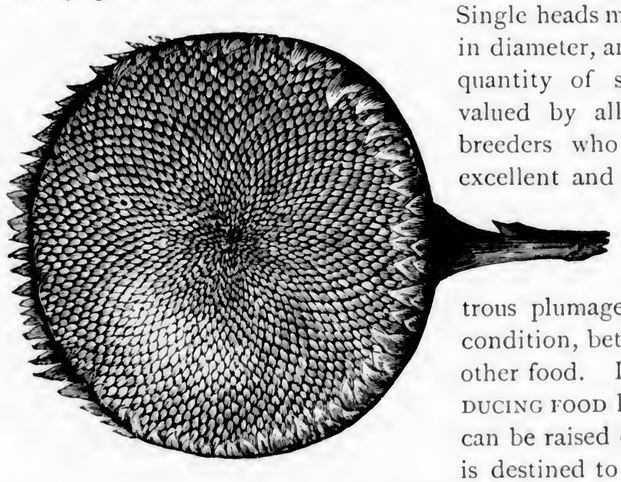
Fowls require a constant supply of pure, fresh water. It is well occasionally to add a few drops of sulphate of iron to the water. The indestructible stone drinking fountains so generally used are well adapted to hold the supply. A large one on the same principle can easily be made out of any old keg or small barrel. Insert a spigot near the bottom, and let its mouth rest in a movable tin cup; the water will flow out only as fast as it is consumed in the cup. A cover should be prepared for the tin, in order to prevent the birds from fouling the water. This is best done by an oblong frame to fit over the cup—solid light wood at the sides and slanting top—the front being made of perpendicular wires. The water should be changed at least once or twice a day on excessively warm days in summer. In winter, once in three or four days is amply sufficient. We would here state that buttermilk and curds are highly relished by fowls, and are very nutritious.

It now behooves us to mention the condiments requisite to good health in our feathered pets. These are neither many nor expensive, but are all important to the thrift and well being of fowls. Poultry must have *lime* in some form, for the formation of egg shell. Crushed oyster shells are the most desirable. They can be procured at a low price, crushed finely by machinery, at any dealer's store. Old mortar will also answer. They must have access to plenty of gravel containing small stones, which are a necessary aid to digestion. These are the "hen's teeth." Granulated or pure ground bone is invaluable for poultry, and it can be fed either in a dish or hopper, or scattered on the ground, like corn. Broken charcoal should be supplied. It abundantly stimulates digestion, and also acts as a purifier in cases of Roup, etc.

Fowls in confinement must have plenty of dust in which to cleanse themselves. Road dust is the best. Coal ashes are also good for this purpose. Customers have often asked our opinion as to the value of prepared food advertised for poultry. These preparations are, as a rule, tonics, which stimulate the production of eggs in fowls. From the great demand for the "Imperial" and other Egg Foods we know they are generally satisfactory. There is no doubt that the production of eggs is increased thereby, and it is a good thing for the fowls, especially when kept in confinement. But it must always be remembered that *breeding* fowls should be in a *natural* condition, never over-fed or too much forced by stimulants.

Before closing our remarks on feeding, we desire to call attention to the Mammoth Russian Sunflower Seed, as valuable for a change of diet.

The accompanying illustration was drawn from a mammoth head of this variety grown by us, from seed which yielded us 120 bushels per acre. Single heads measure 12 to 22 inches in diameter, and contain an immense quantity of seed, which is highly valued by all farmers and poultry breeders who have tried it, as an excellent and cheap food for fowls. They eat it greedily, fatten well on it, and obtain a bright, lustrous plumage, and strong, healthy condition, better than on almost any other food. It is the BEST EGG-PRODUCING FOOD known for poultry. It can be raised cheaper than corn, and is destined to be an article of great value as soon as it becomes generally known. Every farmer should plant some of the seed, on any waste piece of ground, any time from early spring up to the middle of July. It is a wonderful improvement on the old native



sunflower, and besides the great value of the seed as a poultry feed, its leaves make capital fodder, while its strong, thick stalks can be profitably used as fuel. Three quarts of the seed will plant one acre.

GENERAL MANAGEMENT.

Success in any branch of business or industry is achieved only by the most diligent and the most eager to improve every opportunity. We often receive letters from men whose health has failed, very frequently disabled ministers, who desire some easy occupation whereby they can gain an honest livelihood, and who are inclined to favor poultry breeding. A man is always safe to keep out of a business he knows nothing about. If, however, a good opening presents itself, we can safely say the raising of first-class poultry can be soon learned. We would advise beginners to start on a small scale and gradually increase. Poultry costs less to produce than beef, and brings a higher average price. Fowls and eggs are always in demand. The intelligent poulterer can often secure a slight advance on the ordinary market rates by invariably selling a superior article to appreciative customers. To succeed in the poultry business, one should have a natural love for fowls, and should start determined to devote to the breeding of fowls the same application and study which would be necessary to success in any business undertaking. Conducted on business principles, poultry breeding is as profitable—considering the small amount of capital required—as any of the lines of trade, and is not nearly so much overdone. But especially to the general farmer is poultry breeding remunerative. Fowl pay a speedy return for the money expended, and no farm stock yields a larger percentage on the capital invested. In breeding fowls there is one quite important item that is often neglected. We allude to the value of poultry manure. Wright states that he found the droppings from four Brahmas, for one night, weighed, in one case, exactly one pound; and in another more than three-quarters, an average of nearly four ounces each bird. By drying this was reduced to 1½ ounces. Other breeds make less; but allowing only 1 ounce per bird daily, of dry dung, fifty fowls will make, in their roosting-house alone, about 10 cwt. per annum of the best manure in the world. Hence, in half a year this number of fowls, to say nothing of their offspring, will make more than enough manure for one acre of land, 7 cwt. of guano being the usual quantity applied per acre, and poultry manure being even richer than guano in ammonia and fertilizing salts. These figures demand careful attention from the large farmer. The manure, before used, should be mixed with twice its bulk of earth, and then allowed to stand in a heap, covered with a few inches of earth, till decomposed throughout, when it makes the very best manure that can be had.

We quote this to show that no "little things," which seem but trifling economies, should be neglected, but everything possible should be made a

source of revenue. The droppings must be kept dry, under cover. If fowls are slaughtered in large quantities the feathers also will be worth saving. The webs of the large feathers should be stripped from the quills and the smaller ones left as they are. They should be cured by baking four times in a cool oven, about half an hour each time, and allowed to dry for a couple of days between each baking. In supplying the market it is very desirable to have winter eggs. A little foresight will secure a good supply. Animal food must be furnished.

DRESSING AND SHIPPING POULTRY.

On this subject we quote the following, as given by a large commission house:—

"In preparing poultry for market, do not feed for at least twenty-four hours before killing, as food in the crop injures the appearance, is liable to sour, and purchasers object to paying for this worse than useless weight. The French method is the most expeditious and humane way of killing, opening the veins of the neck or cutting in roof of mouth by means of knife (see illustration), and let it bleed freely, as poultry not properly bled will not have a bright, healthy appearance. The intestines or the crop should not be 'drawn.' For scalding poultry, the water should be as near to the boiling point as possible, without actually boiling; the bird, being

held by the head and legs, should be immersed and lifted up and down in the water three times; this makes picking easy. When the head is immersed it turns the color of the comb, and gives the eyes a shrunken appearance, which often leads buyers to think the fowl has been sick. The feathers should then be at once removed, pin feathers and all, very cleanly, and without breaking the skin. It should next be 'plumped,' by being dipped about ten seconds into water nearly or quite boiling hot, and then once into cold water about the same length of time. Most of the dressed poultry sold here is wet picked, and such is generally preferred; but very fat, handsome turkeys, dry-picked, sell well at Thanksgiving and Christmas. Great care should be taken to avoid cutting or bruising the flesh or breaking the bones. It should be entirely cold, but not frozen, before being packed. This is a matter of importance; for if packed with the animal heat in it, it will be almost sure to spoil. If it reaches market sound, without freezing, it will sell all the better. In packing, when practicable, use hand-threshed dry straw; be sure that it is clean, free from dust of any kind, and entirely dry. Place a layer of straw at the bottom, then alternate layers of poultry and straw, taking care to stow snugly, backs upward, legs not doubled up under the body, but straightened out, and fill the package so that the cover will draw down very snugly upon the contents, to prevent shifting or shucking on the way. Boxes are the best packages, and should contain from 100 to

200 pounds. Larger boxes are inconvenient, and more apt to get injured. The objection to barrels is, that the poultry is apt to be much bent and twisted out of shape; they answer better for chickens and ducks than for turkeys and geese; but when packed in barrels, should be packed on the side, keeping the legs out straight. Straw should be placed between the poultry and sides of the package to keep from freezing, though in very cold weather this cannot always be avoided. In packing large lots, avoid putting more than one kind in a package, and mark the kind on the cover.

"In preparing frozen poultry for the late market, dry pick the poultry, as it will keep longer, hold its color better, and command better prices; the head should be left on, and the manner of packing much the same as in the general directions, except no straw or packing of any kind should be used. Boxes of the following dimensions are preferable—say four feet long by two feet wide and fifteen inches deep (outside measurement). Use new inch lumber, well seasoned, and smoothly planed for the inside of the package; they will pack two layers of turkeys or three of fowls. Larger-sized packages are inconvenient to handle, and do not meet with as ready a sale; pack a layer of poultry in as many boxes as will be required to make one layer for each day's work; when frozen sufficiently, the second layer may be packed in like manner; when full, the covers should be placed on and snugly nailed, and the boxes placed together and well covered with straw, say two or three feet in depth, or, should the weather moisten and thaw when the boxes are but partly filled, they should be protected in the same way, in which manner the poultry can be held and forwarded with entire safety. The packing should be done in a cold, dry room, separate from the slaughter-house, and not in the open air, as the wind is apt to turn the poultry dark. Mark plainly on each package the gross weight and tare, and the kind it contains."

EGGS AND CHICKS.

Eggs should be regularly collected every day. The wide-awake fancier can often learn to distinguish the eggs of individual hens, and when this is possible it is very desirable. Thereby, when it is desired to set a hen, the eggs can be retained only from the finest hens or those that are the best layers. Hens of the laying breed will lay 150 to 250 eggs per annum; common hens average about 100 eggs per head. Every nest must always have a nest egg (white china is the best), as it prevents the hens from laying away. Hard shell eggs are always preferable, and hence it must be seen to that the hens have constant access to shell-forming material. It is not best to give them this in the form of broken egg shells, as they may from that acquire the unprofitable habit of eating their own eggs. The cure recommended, if the habit is detected early, is to place in the nest an egg shell filled with the strongest mustard, mixed rather thick. We often have inquiries as to whether eggs for hatching can be sent safely by express for

long distances. We answer, unhesitatingly, Yes! We have sent eggs hundreds of miles by express, and had 11 and 13 to hatch out of a clutch (13). And again, we have sent eggs equally as far and *had none to hatch;* then the purchaser, if he is a novice, is apt to think himself swindled, and write a very ungentlemanly letter. There is, of course, always some risk in transportation, but there are many other reasons why the eggs will sometimes fail to hatch, whether sent by express or set at home. A good plan for shipping eggs for hatching is to take a good-sized box and make a "cushion" on the bottom, *inside*, with hay, one or two inches deep, then spread a layer of bran, on which pack the eggs, each nearly one inch apart and the same distance from the sides of the box. Cover with bran and then fill up with a good layer of hay. In cold weather each egg should be neatly wrapped in a piece of paper. The lid of the box should be gently *screwed* on. The box should have a handle, of a piece of leather or the rim of a barrel. When eggs are ordered from a distance a sitting hen should be in readiness to receive them as soon as they arrive. If none of the hens are ready a broody hen can always be bought at a low figure from some neighboring farmer, or "swapped" for a laying hen. To make the hen take to her new nest she should be changed at night, and it should be as nearly as possible like her old nest. She should first be given some china eggs until she settles down quietly to incubation. The period of incubation is twenty-one days. Right here we might say that to preserve eggs for family use, the best plan recommended in *Wright's Book of Poultry* is to pack them closely together and keep tightly covered up in a mixture prepared as follows:—

"To four gallons of boiling water add half a peck of new lime, stirring it some little time. When cold, remove any hard lumps by a coarse sieve, add ten ounces of salt and three ounces of cream of tartar, and mix the whole strongly. The mixture is then to be let stand to temper for a fortnight before use. Thus treated, if put in when newly laid, at nine months after they will eat quite as good as though only laid six days, though, of course, not quite like *new* laid."

In keeping fowls for eggs it is not necessary nor even desirable to have a cock with the hens. Virgin eggs are preferred by epicures, and will sometimes bring a slight advance in price on that account. To raise fowls in large numbers they should be colonized in separate families. Twenty-five or thirty breeding fowls are plenty in one flock. An experienced poulterer once remarked to us that he could raise more young chicks and make more money from a flock of twenty-five fowls on his farm than he could from fifty—and we believe him. If it is desired to raise poultry in large numbers, they should have separate yards, with plenty of room. When this plan is adopted, and at the same time eggs are the desired product, one pen of the finest fowls can be mated, to replenish the stock, and in the others no cocks will be necessary. In breeding fowls in separate enclosures in this manner, it will be well to allow each flock, on different days in rotation, the

range of the farm. When fancy fowls are bred, it is always well to keep a sufficient number of common hens as sitters. Do not confine your fowls in too close quarters. We constantly see the bad effects of this mismanagement. The fowls become enfeebled, lose their vital power, and, as a consequence, the eggs are often worthless. Whenever it is practicable, we advocate unlimited range. When fowls are bred in confinement their wants must be constantly kept in view, and a plentiful supply of some greens, scraps, worms, etc., given.

Hens should be set in the evening, and should be furnished with comfortable nests in a darkened and unmolested spot. The nest should be made flat (when very concave the eggs do not lay so well), and is best made out of an inverted sod, or three layers of dry earth or ashes, with straw, hay, or forest leaves placed thereon. Thirteen eggs are the best number covered by average hens. But in cold weather eleven, or even nine, or seven—according to the size of the hens and eggs—are amply sufficient. A larger number would only become chilled. The hen should be taken off the nest (if she does not go off of her own accord) every day, for food, water, brief exercise, and a good dusting. Do not, as a rule, remove the young chickens until twenty-four hours after all are hatched. Occasionally one may need some assistance to get from the shell. This should be given cautiously, and only in extreme cases, by gently indenting the finger into the shell (without touching the inside membrane), in a circle from where it is clipped. When the chicks are hatched the mother should be placed in a coop about two or three feet square, placed on the ground and with slats in the front, through which the chicks can run out to exercise and receive food. Young chicks should always be kept dry and where they can get plenty of sunlight. It must be remembered that fowls attain their growth in from four to eight months, and can never make up for any "back-sets" in that period. Feed regularly and often until five or six weeks old, at first with cooked meal and hard-boiled eggs mixed. Give fine-chopped green food, and let them have the benefit of a grass run. The floor of the chicken-coop should always be kept clean and free from vermin by a fresh supply of dry dirt. Chicks should always be kept growing while young. If intended for marketing they should be forced and marketed early; spring chickens pay the best, by all odds. For breeders, however, it is not necessary to hatch the chicks too early, as those hatched in milder weather require less care, grow better, and are fully as profitable. Asiatics, however, intended for fall shows, should be hatched by the first of March. April, May, and June, however, are the best months for hatching fowls intended for breeders. After the first few days a small bit of meat can be chopped with the food once a day. Soft food should be fed fresh very often—only so much each time as is entirely consumed. A little bone meal should be added to the food. After the chicks are two or three weeks old the evening meal can consist of cracked corn and wheat, or good screenings. Chicks should always have a grass

run; if deprived of this, green food must be furnished to them daily. Chopped cabbage leaves are highly relished by them. A plentiful supply of pure, fresh water must be constantly at hand. In winter the chicks require more stimulating food than in summer. Beef scraps can be boiled and mixed with the soft food. If the chicks have been liberally fed they will be in prime condition for the table without any extra fattening. Growing chicks must always have plenty of exercise, and should not be crowded together in too close quarters. In raising fowls for market, as a rule, the chicks should be killed as soon as ready, certainly as soon as they have attained full size, as then better prices are generally procured than later in the season. The food afterward fed is, therefore, worse than wasted. Besides this, there is considerable risk from disease in holding a large lot of poultry. In breeding fancy fowls the young chicks that turn out inferior, "culls" or "scrubs," as commonly called (and alas! even the best strains will sometimes throw these despised and ought-to-be-rejected specimens), should be marketed as soon as distinguishable, at from three to six months old. Don't be afraid to kill your poor chicks; it is the only way to ultimate success. If all are killed this year there will be fewer next year.

PRACTICAL CAPONIZING AND HOW TO MAKE POULTRY PAY.

This chapter contains full details with illustrations of the business in all its branches, for which we are indebted to Mr. William H. Wigmore.

The art of caponizing seems to be very little known or understood in this country. I therefore mean to condense the form as practiced by the best and most experienced English, French, and Chinese experts, together with such information as I have been enabled to gather from other sources. Poulterers and farmers wishing to become experts in the operation of making capons would do well to imitate surgeons, who always try their hand on dead subjects before performing on the living. The operation is quite simple, and in France and Italy is frequently allotted to mere children.

The advantage of capons is a much larger fowl. They grow to the size of a turkey, or in other words, they increase in size as a steer does to an ox. Their meat is sweeter and of a finer flavor, therefore it sells at a much higher price. They can be made useful in raising or mothering many more young chicks from a hen or an incubator than the hen will, on account of their large size. They like the chicks' company, neither hens nor cocks having any use for them. Should they object to the young chicks, coop them up in a dark place for a few days, then they will gladly take the chicks under their wing. It is a common thing in France to put a small bell on his neck to keep the chick with him; it takes the place of the hen's clucking.

ON CRUELTY OF CAPONIZING.

The operation can be performed in less than two minutes, therefore on the score of cruelty there can be very little said. It is no more cruel than castrating calves, colts, lambs, and pigs. Not only so, but male birds which could not be kept together without great danger of constant conflicts will live in peace and amity, besides, many more can be housed together. The former reason would of itself be sufficient to warrant the adoption of caponizing, for the pain suffered by the bird is infinitesimal as compared with a single fight. The benefit, therefore, altogether outweighs any objection on the score of cruelty. But where there is the additional inducement of obtaining very much greater size in the fowls, with very little outlay, it is surprising that the plan has not been very largely adopted. In France capons and poulardes are very numerous indeed, even in the ordinary markets, and it is found that birds so treated thrive much better, fatten to a greater extent, and, as they are not so restless in temperament, lay on a finer quality of flesh.

First, then, the question of profit, which in all commercial matters must have pre-eminent weight. Upon this score, fowls intended for the table should be caponized, because the chickens so treated can thus be made the most of, and will realize for the breeder more than they otherwise would. Many persons object to the giving of unnecessary pain, but there are certain things that may be done in which the pain is small compared with the benefit, and caponizing we regard as one. Causing pain for mere wantonness or pleasure is at all times to be strongly condemned, but, as in this case, where the infliction of a very slight pain saves greater suffering, and is attended by so many benefits, there can be no legitimate objection to it. But it is most important that any one who undertakes the work should be able to perform it without bungling, or very much unnecessary pain will be caused.

It is very essential that proper instruments should be used, and I claim that mine have no equal in the market. I have manufactured and operated with all kinds of caponizing instruments for the past twenty-five years; I therefore claim to know what are proper instruments.

EXPERTS.

There are several experts in my vicinity, who state that it is a common occurrence for them to make ten dollars a day caponizing cockerels for poulterers and farmers in their neighborhood. Therefore, those having a taste for this line of business could turn quite a number of dollars into their pockets by becoming experts, and do the caponizing for farmers within a radius of five or ten miles.

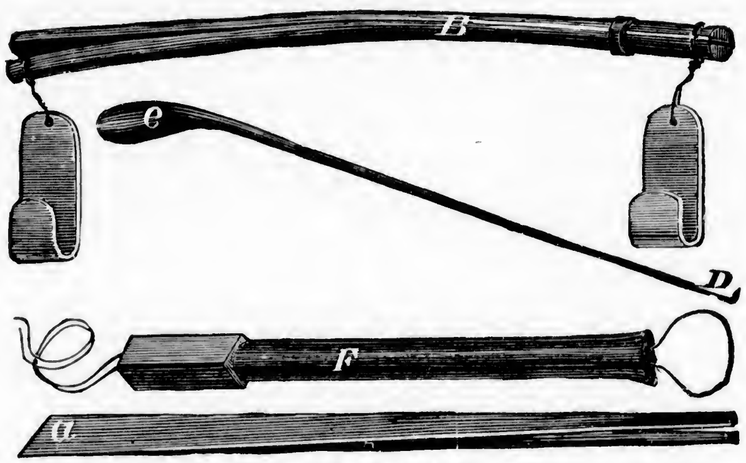
CAPON ADVANCE.

I believe in a few years farmers, to their great surprise, will wonder why they could not see the profit there is in caponized fowls; besides, there will

be capons on the bill of fare of different flavors,—celery, parsley, mint, etc., as the canvasback duck gets its fine flavor from the wild celery it feeds upon.

CHINESE METHOD.

The beveled knife *a* on the forceps is for making the incision. The whalebone *B*, with a hook at each end, is the spreader for holding the wound open. Hook *D* is for tearing the thin skin open. Tube *F*, with horse hair at the end, is for sawing off the testicle. Spoon *e* is for scooping out the testicles after they are cut loose, also for spooning out the blood. This set, I consider, takes great skill to operate with. I believe very few persons have patience enough to learn with this set. There are numerous other sets on the market, some of which are a slight improvement over the Chinese.



CHINESE INSTRUMENTS.

BEST BREEDS.

Brahmas, Cochins, Plymouth Rocks, Wyandottes, Dominiques, and Dorkings make fine capons. The advantage is the same with almost every breed, even the common dunghill. Always select the largest breed you have. At present, if you were to call for capon at your hotel or café, you would not know whether it was a fine or common breed, unless you had made a study of their taste. Most any one who has eaten capon can tell them by the taste, as they are very tender and of fine flavor; in fact, very few hotel managers or caterers know themselves what breed they are serving to their customers.

BENEFIT TO THE FARMERS.

The question is often asked me, Would it pay a farmer to raise capons for his own use? The following is proof that it will. If they put 100 per cent. more money into the poulterer's pocket by the increase in price, and from 30 to 50 per cent. more weight, the farmer's table will gain the extra weight without any extra cost.

PROFIT IN CAPONS.

Every farm and poultry journal and poultryman will acknowledge that capons pay well to raise. You ask the farmers why they do not raise them. They generally say, I cannot or have not nerve enough to caponize. They should follow the example of a lady who ordered my patent set and instructions, and afterward wrote as follows:—

"*Dear Sir:* After receiving your patent set, I read the instructions over several times carefully. I operated on four dead cockerels. I then tried to cut a live one but could not. I took up the knife and laid it down several times. At last I nerved myself up to the task, and after the first incision, to my own surprise, my nervousness all left me. The following two days I caponized 120 cockerels, and only lost three; besides, I attended to my regular housework."

I will here give you an idea of the extra profit she gets over the cockerels. She would have the 120 cockerels at 8 months old weighing 4 pounds each, or 480 pounds, and sell them for 13 cents per pound, which would net $62.40; but as they are caponized, at 8 months old they will weigh 6 pounds each, or 720 pounds, and sell for 18 cents per pound, and will net her $129.60. You see this is more than 100 per cent. profit over the cockerels.

Another fact I will refer you to in the *Poultry Magnet* on page 85, June number of 1886, signed Blake, Cardington, O., who caponized 22 birds without losing one. They did well and averaged 10½ pounds dressed. He sent them to the New York market, and they sold for 21 cents per pound, or $48.50. After deducting the express charges, commissions, etc., the lot netted him $43.75. These same birds, if not caponized, would have weighed but 7 pounds each and sold at the same market for 15 cents per pound, and brought but $23.10, without deducting the express charges, commission, etc.

The time is not far distant when the incubator will enable us to caponize all the year around.

SLIPS.

Slips are partly caponized fowls, and they are not very easily told from the cockerels, only by their large size and the wound on their side. They are often as large as the full capon. The cause of their being slips comes from leaving some of the testicle within. This piece will grow quite large, and in some cases larger than ordinary, and it is filled with a watery substance. They are quite a nuisance to the hens, as they are constantly chasing them. There seems at present to be more slips on the market than full capons and they bring within 2 or 3 cents of the capon price. I am confident the operator will not have a slip after operating upon a dozen birds with my set. Should you leave a small particle within, it is extremely easy to spoon it out with the aid of the slot in my scoop twister.

FEED.

There is no difference in their food from other fowls after the first few days. They, of course, are without food from 24 to 36 hours before being operated upon, therefore are very hungry. They should be fed very sparingly for the first day or two on scalded corn meal with a little salt, then you can give them more. After a week give them plenty of food; you will find them very ravenous for a month or two, then they gradually ease up and eat considerably less. If they are confined give them some bone meal, broken clam and oyster shell. They should have plenty of the best water you have. Do not allow them to drink from dirty little puddles or stagnant ponds, which give them a bad flavor, also may cause disease. They should be kept separate for the first month or two, as you do not want your other fowls over-fed, which would be the case if you were to satisfy the capons' appetites. Any number can be housed together, on account of their quiet nature, so long as you keep their quarters clean and healthy.

FOR MARKET.

For market dress them as you would a turkey, with feathers on their necks, wings, and tail. The retailer can make them very showy by putting a narrow ribbon around their necks and wings, as a butcher does his prize beef, veal, and lamb.

DUCKS.

It is more difficult to caponize ducks than any other fowl, as they are very compact, their entrails filling them up completely. At three months old their testicles are harder to get hold of. They are much longer and narrower, and lay closer to the back bone than in cockerels. It is common for their bowels to protrude through the incision while endeavoring to catch the testicles in the scoop, something that never happens with any other fowl.

PULLETS.

Pullets that do not lay in due time may be made poulardes. Open their *left* side between the first and second rib, same as you would a cockerel, but do not tear open the thin skin covering the bowels, but look in the same position that you find the testicles in a cockerel, allowing the sun to shine in at the same time. You will see the egg cluster quite plain. If they are fine, like small fish roe, they will not lay for some time, in which case I would recommend altering them.

OPERATION.

Tear open the thin skin. You will see two milky white cords or tubes leading down from the egg cluster. The upper or larger one, which is about the size of thin wrapping string, is the egg passage. Take hold of it with a pair of tweezers or a bent piece of wire for a hook and cut out about an inch,

which will stop her producing eggs, and make her grow larger and improve in flavor, the same as a capon. But if some of the eggs are the size of a pea or larger, you may know she will begin laying soon, and I would save her. The cut in her side will heal up and not interfere with her a particle. The egg passage in a pullet about to lay is considerably enlarged, and after she has laid for a while it becomes the heaviest entrail she has. I would advise those wishing to make poulardes to kill a four-months-old pullet and an old laying hen and cut their left legs off at the hip joint, then the plates from the second rib down, which will expose the bowels. Ease them out toward the front; then you will easily see the bowels and egg passages in both, the bowel passage being on the right and the egg on the left side. Now you wish to make sure of the egg passage in the pullet. Introduce the probe just below the egg cluster, pushing it gently down the passage, and it will make its exit at the proper place. By doing this you know precisely what you have to do to make poulardes. Without this dissecting I consider it impossible to know what to cut unless you have been shown by an experienced person. Some advise cutting below the flank. I consider the above best, because you can see the condition of their eggs—besides, it is a safer place to cut.

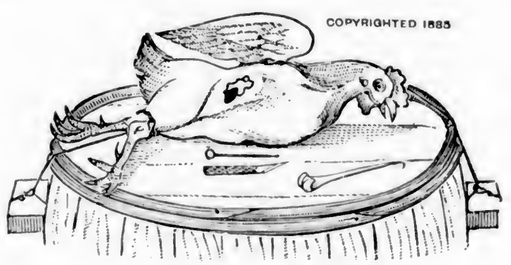


FIGURE 1.

This cut shows plainly my method of holding the fowl. One cord around both wings, the other around the legs above the knee joints.

I would here state that the following illustrations were not drawn and engraved, but they were photographed from a live cockerel, and the hands shown are my own; besides, there was not a feather plucked from this bird's side. I generally bare enough of the flesh by wetting the feathers and turning them under, as a man would in twisting his moustache. Figs. 6 and 7 are photographs of a dead cockerel. Each and every piece of my set is entirely new and original with myself. Any scoop twister without "Patented June 22, 1886" stamped on it is an infringement.

Fig. 2 shows the fowl in position and the operator in the act of making the first incision.

OPERATION.

First have a narrow table, box, or barrel, so you can move it around and get the sun on the fowl in any position you wish, as the sun is a great aid

to a learner. Lay the fowl upon its left side. Wrap the cord twice around the bird's legs above the knees. With one wrap they are liable to kick themselves out of the loop. This style hooks enables you to make a slip-loop quickly. The other cord put once around his wings. The opposite ends of the cords attach to a half brick or a weight of some kind, then let

FIG. 2. (*Copyrighted 1886.*)

them hang down over the sides of the table as shown in Fig. 1; by this means you have them secure.

Wet the bird's side and feathers with cold water to prevent bleeding, and it will also make the feathers stay where you want them by twisting them under, as a man would his moustache. This will enable you to perform the

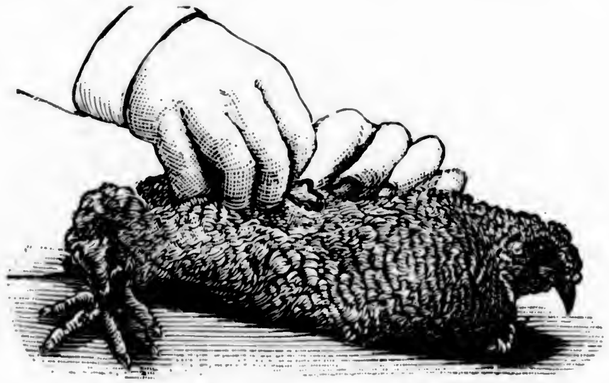


FIG. 3. (*Copyrighted 1886.*)

operation without pulling a feather. Pull the flesh on the side down toward the hip, so when the operation is over the hole between the ribs will be entirely closed by the skin going back to its place. Therefore the opening in the skin will be ¾ of an inch above that between the ribs, enabling the wound to heal up in a day or two. The incision must be made between the

first and second rib, about ½ inch long. When you are ready to cut, push the point of the knife in quickly one-quarter of an inch, and hold it there a second, as he will work his ribs up and down just at that moment. Then he will become quiet. Increase the cut to ½ inch. Lay the knife down, keeping the skin in place with the left hand. Now you are ready for the spreader. See Fig. 3.

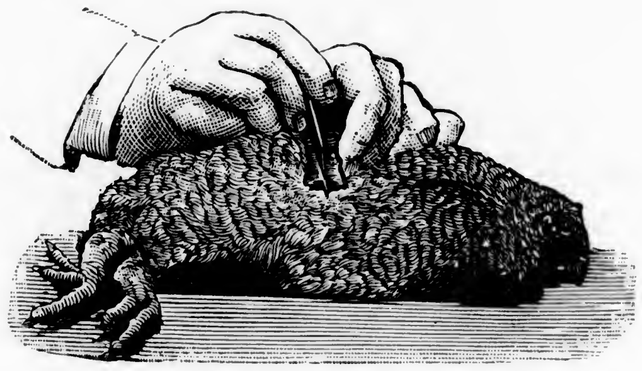


FIG. 4. (*Copyrighted 1886.*)

Take the spreader between the thumb and first finger, press it until the two ends come together. Then insert the hooked ends in the incision with the spring end toward the bird's feet. Now turn the spring part toward the bird's back, making sure to have the hooks between the ribs. Hold the spreader in position with the left hand. Take up the knife again. See Fig. 4.

FIG. 5. (*Copyrighted 1886.*)

Increase the opening by cutting toward the back-bone and forward on a line between the ribs, until it is large enough to admit the free passage of the scoop twister. Care must be taken not to go too near the back-bone. After a little practice you will be able to do this cutting and draw little or no blood by cutting on a line with the veins instead of crossing them.

Should they bleed much wipe it off with a damp rag or small sponge before you tear open the skin. Otherwise the blood will run in on the testicles and make the lower one harder to find. Take up the scoop twister. See Fig. 5.

With the hook end tear open the thin skin until you have the right testicle well in view, and plenty large enough to press the scoop twister through.

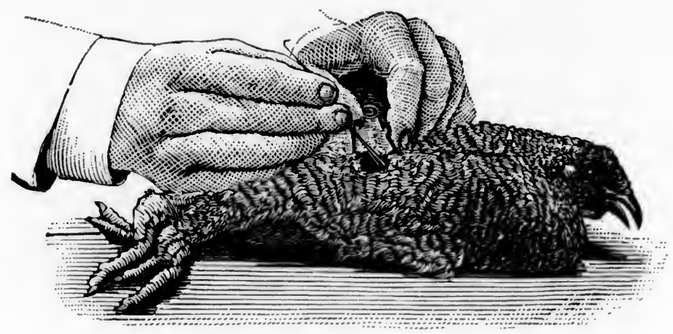


FIG. 6. (*Copyrighted 1886.*)

This hook must be used with care, or you may puncture an artery or the bowels.

Take the probe in your left hand. With the ring handle push the bowels aside, and just below you will see the left testicle. Introduce the scoop

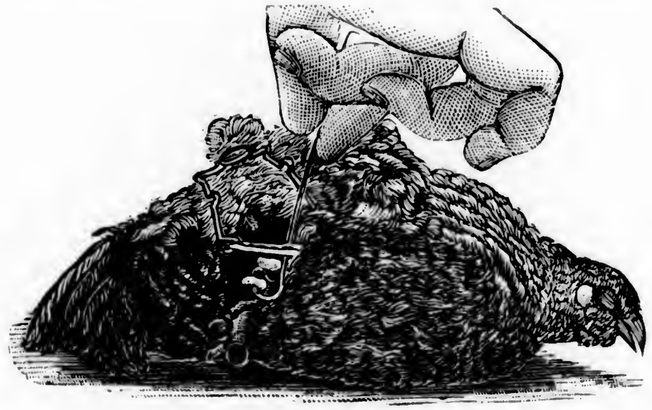


FIG. 7. (*Copyrighted 1886.*)

twister with your right hand, see Fig. 6, catching the lower or left testicle endways in the scoop as shown in Fig. 7, gently shaking it to get it all in, and make the spermatic cord settle well down in the slot. Then begin to twist the testicle off. At this point learners will find the probe very valuable for keeping the testicle in the scoop, as it sometimes slips out, also for preventing the bowels being twisted up by the scoop. A number of these difficulties disappear with a little practice. An experienced person will find little or no use for the probe.

Now remove the right or upper testicle, see Fig. 8, same as the left.

Both testicles are shown in Figs. 7 and 8, to give you their exact position. The left testicle should always be taken out first, as it is the hardest to remove. If you remove the right one first and cause the bird to bleed, it will run over the lower one; then you cannot see it as well, and will have much more trouble in getting it out. But when the left one is out it will not be over ten seconds before you have the right one out. I find most beginners want to remove the upper one first. They say they have a better view when the right one is out of the way, but that is only an excuse.

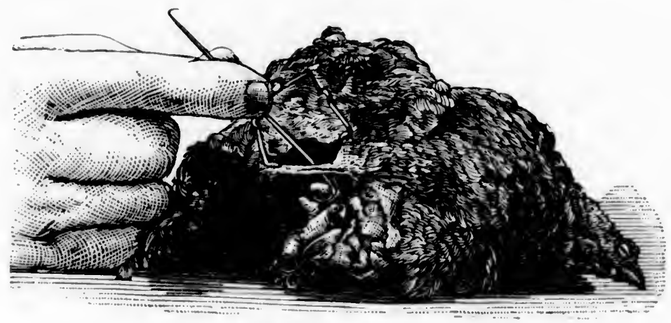


FIG. 8. (*Copyrighted 1886.*)

Many persons like to do the easiest part first, therefore I insist on the lower one being removed first.

If you should leave a small piece in by not getting it all in the scoop properly, put the scoop in again and catch it in the slot, even if it is no longer than a pin's head, as these are the pieces that produce slips.

If the testicle is very large, which you will find is the case with a four-month-old Leghorn, take the scoopful out, then go after the balance until you have it entirely out.

If you cause much blood to flow, spoon it out with the scoop twister.

The next day after the operation, if you find they have a windy swelling, just run a darning needle through the skin and it will all escape. Sometimes I just let them go and they come all right themselves.

If you should cut an artery in the operation, they are as good for food as if they had been bled in the neck.

If all right after the operation, they generally have a passage.

THE MOULTING SEASON.

The moulting season is the most critical period of a hen's life. They require the utmost care and watching at this time. Food of a nutritious character should be given. Meat scraps fed in abundance at this time is one of the best of foods. The one who keeps poultry for profit is he who gathers eggs in abundance when his neighbors bring in few or none at all, the market prices being higher in exact ratio to the scarcity of the supply. Eggs, as a rule, are less plentiful during the months of October, November, and December than at any other time. The increased coolness of the weather causes this to some extent, but, no doubt, it is on account of the severe drain upon the system of the old hen during the moulting period, which, according to some authorities, lasts from sixty to ninety days, beginning some time in August. We must do our best to tide them over this exhaustive period of moulting in the best possible condition. Being forearmed and giving good, nutritious food in time to build up and strengthen their systems is one-half the battle, but feeding to fatten alone will not answer all purposes. Something more is required to tone up the system to its highest point of vitality. The general health must be perfect in every particular, each organ performing its proper functions without let or hindrance, and the hens cared for in such a manner as to make them happy and contented, always going and always busy. It is much harder to bring hens which are confined through the moulting season than those which are allowed to roam over the entire farm, as the latter, after July, will invariably wander away to the distant fields and pick up the grain, seeds, etc., which are ripening about this time, having a greater variety of food than can be given them in close quarters. Two meals a day until frost are amply sufficient, the lightest, consisting of food most easily digested, being given at night, for if fed to depletion in the morning a fowl feels no need of exertion. Wheat, oats, rye, barley, and buckwheat are to be preferred rather than Indian corn; still, the latter has its place, which nothing else can fill. Milk is especially acceptable at this time, and if the flock enjoys a good range insects will take the place of meat, except, of course, the refuse from the family table, which, together with the stale bread and spare vegetables, whether cooked or uncooked, should be regarded as their special perquisites all the year round. Many of our best fanciers of to-day claim that the loss of many hens at moulting season is unavoidable, but it is simply an acknowledgment of their inability to care for them properly. The process of feather-making is very exhausting, and hot weather renders disease more prevalent, but, if proper sanitary precautions be strictly enforced, the flock may be kept just as healthy, if not as handsome-looking, as at any other season. It would be well at this time to state that one of the best precautions to take would be to remove from your poultry houses the nests, roosts, and all other fixtures preparatory to a cleansing. Then commence

by fumigation, closing all the cracks in the house. Buy about five cents' worth of flour of sulphur, put it in a tin pan, and light it. Then go out, leaving the entire house closed up for about three or four hours. This will kill every insect in the house. After this whitewash it thoroughly from one end to the other, adding carbolic acid to the wash, going in every crevice. Before putting back the nests and roosts take a clean whitewash brush and go over every part with coal oil, saturating them thoroughly. Then light each piece separately, when the oil will burn off, leaving the roosts and nests in a perfectly clean condition without injuring the wood. Care must be used, however, not to do this near the barn or in any place where it may ignite with some other buildings. After cleansing the houses thoroughly get a barrel or so of good road dust and scatter the dust thoroughly from one end to the other of the houses, leaving quite a large box in one corner for the hens to take their dust baths in. They will readily free themselves from lice in this way, and you will find your houses and fowls perfectly clean in every particular. Powdered sulphur and tobacco stems ground fine together and added to the dust will be found a valuable ingredient in freeing the hens from lice. When the flock is in good condition before moulting begins, inspect the hens carefully and see if there are any among them to which you would be unwilling to accord a three months' credit of food and attention, trusting them to balance the account by future egg production. Those fat, waddling old hens, which were kept over last spring because they were such good setters and mothers, you know will never repay you if allowed to get that deep in your debt. So be hard-hearted for once and dispose of all except those that are young, spry, and energetic-looking. They are the ones that will moult without any trouble and pay their way, too, with an egg now and then. Besides, the early hatched pullets will be coming pretty soon, and it is the law of nature that the old shall give place to the young.

POULTRY AS A SOURCE OF PROFIT.

That poultry and eggs are always in demand is shown by the fact that we do not produce enough for home consumption, importing them in thousands of dozens which we cannot supply ourselves. That the poultry market may be overstocked is feared by many who contemplate making poultry a matter of profit. It requires but a few minutes' thought to dispel such a fallacy, as many of our oldest poultrymen can recollect the time when the turkeys were driven to market on the roads and hundreds of baskets of eggs were carried to the cities in wagons. As soon as the railroads penetrated in every direction the prediction was that the demand would be far below the supply. The prices, however, to the surprise of those who had so predicted, advanced. Although the facilities of the present day are sufficient to bring into the market eggs from every section of the country, however remote; the fact

stands forth that the prices during all seasons are nearly three times as high as they were previous to the increased facilities. We do not ask you to take our own words for this, but look back yourself and verify our statement. The product of carcasses and eggs is ten times greater, while the expense of marketing is much less. Yet the demand cannot be supplied, and Europe is annually called upon to send over a portion of her stock on hand in order to help us out. As long as there are plenty of eggs and poultry in the market buyers will have them and, granting by some possibility there may be an over production in quantity, there will still be a demand for quality, and the poultryman who markets only the plump, fat carcasses and sends only perfectly fresh eggs to his customers will always find himself besieged for more while others are begging for sales.

THE CAPITAL REQUIRED.

Among the many inquiries made regarding the matter of raising poultry in large numbers is, "How much capital is required?" If the inquirer will but compare the poultry business with any other, a little reflection will enable him to unravel for himself whatever mystery may be attached to it. If $1000 be invested in a mercantile pursuit, the interest on capital invested, at six per cent., amounts to $60, and a dividend of ten per cent. will give $100, or a total of $160 on an investment of $1000. It is conceded that a return of $160 on a capital of $1000 every year is an excellent one, and why not take the same view of the poultry business? We are safe in asserting that $160 can easily be made on $1000 invested in poultry, and even more; but the above is given to show that the beginner does not fail simply because he cannot secure several hundred dollars on a small investment. The poultry business will give as large returns as any other, in proportion to capital invested, provided proper care and management is bestowed. The difficulty with most persons is that they expect too much. They are not disposed to take a business view of the matter, but desire the poultry business to do what they would not for a moment expect from any other, which is a return of the capital in one season. We have often had parties ask if they could maintain a family with the poultry business on an investment of a few hundred dollars, something which they would not hope for in any other enterprise.

Five cents per pound will cover the expense of raising chicks to the age of three months. That is for the feed; but we must also consider that, in order to hatch and raise a brood of chicks, there is the value of the eggs from which the chick is produced, the interest on capital invested in quarters, fences, etc., and the labor of caring for the fowls. The larger the number of chicks raised the smaller the expense proportionately, as but little more care and labor is required for a large number than for a smaller. In one lot of 3000 chicks on a farm in New Jersey, a strict account of all the expenses

developed the fact that while but five cents was required for producing a pound of poultry, the total cost for buildings, labor, feed, and interest was nine cents. This sum may be safely estimated as the maximum cost of producing a pound of poultry, but it may be reduced or increased in proportion to the number raised; the larger the number, as we stated before, the smaller the expense for each chick. The expense for food will not be diminished or increased, but the buildings, fences, and labor will fluctuate in value according to the number.

It has been estimated that the cost of the quarters amounts to about one dollar per head, or, rather, that it requires about $10 to build a house for ten fowls, and $100 for a house for one hundred fowls, but it is apparent that the larger the house the cheaper the cost proportionately, while so far as the labor is concerned, one can as easily feed one hundred fowls as ten, and also keep the quarters clean more economically as compared with the fewer number. Yet, in the face of these advantages in favor of the keeping of poultry in large numbers, the general result heretofore has been that the smaller the number the larger the profit, a result entirely at variance with the rules applying to all other industries. This can only be accounted for on the supposition that the small flocks receive more attention than the large ones, and it is probably the solution of the problem. Those who have a few fowls only are careful to feed them a variety, and the quarters are made as comfortable as possible, not a day passing by that some member of the family does not assist in caring for the fowls, while larger numbers are often overlooked, and many of the essential details neglected.

The cost, of course, depends upon the labor, but with a small flock there is a bestowal of labor which is not valued, being performed by children and ladies as a source of pleasure, but which would be considered as an important item in an account kept with a large flock. That nine cents will cover all the cost is a fair estimate, and it leaves a large margin for profit if the chicks are hatched early and advantage be taken of high prices. Even if only 12 cents per pound be realized the profit is $33\frac{1}{3}$ per cent., which is much larger than may be expected from many other sources.

BREEDING FOR MARKET.

While it is admitted that the markings and plumage of a bird is an index to its purity, yet we often see the sacrificing of some of the best in the flock because of a slight defect that does no injury, but which serves as a disqualification in the show-room. This practice has been very damaging to the value of the breeds for utility, as the plumage in no manner affects the laying qualities or adds to the attractiveness of the fowls for market. And yet, without a strict adherence to some definite rule by which the breeders of thoroughbred poultry can be guided, our flocks would degenerate into dunghills and their characteristics as breeds be entirely lost. But there is a limit

even to the fixed outward indications, and when once the desirable object has been attained of giving them a uniform exterior, the more important essentials should not be overlooked. Poultry is destined to serve a greater purpose than that of being petted. The majority of those interested have no inclination to devote their time to the breeding of beautiful birds only, but prefer to realize a profit from carcasses and eggs; and hence any attempt to sacrifice vigor and strength in order to secure a straight comb or a certain shade of color will in the end prove detrimental. This is proved already from the fact that while the fancy breeders have been more exacting in their standard requirements than any other class, yet they have not succeeded in securing a flock of uniform show birds from the best of their prize-winners, while the Berkshire swine breeders, who give but few points to color marks, have only a small number of culls in their herds.

The farmers who raise poultry for market, however, owe much to the breeders of fancy poultry, for despite all mistakes they may have made, they have preserved the purity of the breeds, and as their standard is only in its infancy, the time will come when all the breeds will combine not only the characteristics of utility, but convey also the outward evidences of the purity of the stock.

Select those that come up to the standard in points, if you can, but do not discard a good specimen of robust constitution for a slight defect. Be liberal in allowing a few fowls to have drawbacks if such imperfections are such as to cause no injury to the offspring, but, above all, select for vigor and strength. It is not always the largest fowl that is the most vigorous, but the one with full, bright eyes, heavy bone, compact body, and quick movement. In plumage see that the color of the hens harmonizes with the color of the cock. If the hens are too dark, allow the cock to be somewhat lighter, and if the hens are very heavy in the body, use a medium-size cock. Too much weight is not desirable in fowls, although many boast of weight in preference to other qualities. The chief objects, no matter which breed is used, should be vigor and activity. An overgrown, excessively fat fowl is a nuisance, and should not be tolerated.

BREEDING FOR EGGS.

To keep hens for laying purposes, where eggs for market only are desired, is a different matter from keeping hens to provide eggs for hatching purposes. It may safely be said that for market purposes, laying, and hatching the conditions vary. It is a well-known principle in breeding, that the female must be in a proper condition to become fruitful, and this rule applies to the hen as well as to the animal. The fat Shorthorn cows are often barren, while those that produce large quantities of milk and butter, such as the Jerseys, Holsteins, and Ayrshires, usually bear calves every year, as the production of milk prevents overfatting. In making up a pen for breeding purposes, therefore, the poultryman must consider two or three

points that must be observed in order to secure good hatches when the eggs are incubated. In the first place, the eggs from pullets do not hatch as well as those from hens, unless the pullets are early hatched. This difficulty may be overcome somewhat, however, by mating two-year old cocks with them. Again, while the cockerels may be used in the yards, they should always be mated with hens, and not pullets. The conditions to be observed are to feed a sufficiency of all that tends to provide the constituent elements of an egg, without furnishing a superabundance. By feeding so that the hens must scratch, we bring them under the same conditions by which it is known that a mare kept at moderate work will produce a better foal than the one kept standing in the stable and pampered. It is true, as has often been stated by those who sneer at improved breeds of poultry, that they are pampered too much, and especially is this true of breeding hens, as eggs from such do not hatch well, and when they do the chicks are weak and sickly. No amount of lime or oyster-shells will prevent soft-shelled eggs from hens over fed, while disease is liable to occur among them at any time.

We often read of hens that lay 200 eggs a year, but such statements do more harm than good, by inducing the inexperienced to believe such to be a fact. Any one who is familiar at all with poultry knows that during the fall all hens undergo the process of moulting, or shedding of the feathers. This requires, usually, about three months, or 100 days. As there are only 365 days in a year, we have 265 days left after deducting the moulting period. If a hen lays, regularly, an egg every other day, she will lay 133 eggs, but she will probably lose three months more in hatching out her broods, and even if she is a non-sitter she will take a resting spell. As moulting is a heavy drain on the system, but few hens lay during that process, though there are exceptions, and where the number of eggs exceed one every two days, it will be found that a corresponding reduction occurs during some period of the year. While we admit that certain individual hens have been known to lay as many as 150, or even 175 eggs in a year, such cases are rare, and if one has a flock of twenty hens or more, he should he satisfied if there is an average of 100 eggs a year for the whole flock, or rather nine dozen. Four dozen out of the nine should realize thirty cents per dozen, three dozen should bring about twenty cents a dozen, and two dozen should realize fifteen cents per dozen in this section, or an average of about twenty-three cents. Of course, this calculation may be wrong, but it will convey an idea of what may be expected.

Many poultry raisers provide their fowls with warm quarters, and feed regularly and on a variety, but yet they get no eggs. Such cases are numerous, and we will endeavor to point out a remedy for the difficulty. We well know that if we keep a horse in a stable and feed him well he becomes restless and unhappy, and in order to keep him in good health he must be exercised. With fowls, the winter prevents foraging, and our kind readers go to the coops in the morning and give the hens a good, heavy

feeding. The hens, being full, are *satisfied*, and have no inducement to ramble, consequently, do not take any exercise, and become too fat. The better plan is to get some chaff, cut straw, leaves, or even dirt, and place it where the hens can scratch in it. In the morning give the hens a mess of warm food, but *only a little*. Now throw some grain into the scratching heap, and make them *work* for the balance of their meal. Feed nothing but what they will have to *work* for. At night feed them all they will eat. The object is to keep the hens busy during the day, but let them go on the roost full. Hens that are compelled to work will lay better and keep in good health, while the eggs will produce stronger chicks. They should always have a warm mess early in the morning, especially in the winter, but the meal should be so given as to leave them somewhat hungry. Do not feed them at noon, except by putting their food in the scratching heap, and never give soft food in the scratching heap. In other words, keep them scratching for oats, wheat, seeds, and even for ground shells. Give no corn except at night, and give them their night's meal without making them scratch for it.

THE GROWTH OF YOUNG CHICKS.

Considerable discussion as to the growth of young fowls having reached us, we give here the result of careful experiments.

The growth of chicks, as ascertained during a period of three months, was as follows, viz.:—

The egg weighs	2	ounces.
Chick newly hatched weighs	1¼	"
" 1 week old weighs	2	"
" 2 " "	4	"
" 3 " "	6¼	"
" 4 " "	10	"
" 5 " "	14	"
" 6 " "	18½	"
" 7 " "	23½	"
" 8 " "	28	"
" 9 " "	32	"
" 10 " "	36	"
" 11 " "	41	"

The chicks experimented with were Plymouth Rocks, though considerably mixed with other bloods. They were fed mostly on a mixture of bran, oatmeal, and corn meal, moistened with milk or water, and baked, sometimes merely cooked with boiling water. Whole wheat and skim milk cheese served as a variety during the first four weeks, and the cake was sometimes made richer by the addition of a little animal meal ("pulverized dried bone and meat")." Out of quite a large flock, not one chicken died from disease. They were fed very regularly three times a day, and all they would eat up clean. A flock which increased two pounds in weight a day consumed less than six pounds of corn meal, or its equivalent in other food, in twenty-four hours; and what vegetable and animal matter they could pick

up, which, in spite of unlimited range, did not appear to be very much; at least, they were always hungry when they came to their meals. From the above, you will see that the actual expense of making one pound of "spring chicken" was in this case not more than four cents. The market price in cities during July varied between twenty and twenty-eight cents.

We might have grown those chicks still faster by giving them a greater variety of food, but did not attempt to force them. Or we might have grown them slower, but with less expense, had we made them shift for themselves. There were *no* grasshoppers.

DISEASES.

Nearly all diseases may be traced to filth. How many leave the droppings until they accumulate in large heaps cannot be numbered. Some persons clean out the coops weekly, while others, by the use of absorbents, defer the work to longer periods. The safest course is to clean out the houses and coops daily, as is done with the stables. It is not at all surprising that so many persons do not regard poultry as profitable, as they do not attach that importance to the business it deserves. Any farmer who did not clean out his stables oftener than once a week or a month, no matter how much absorbent material he used, would soon find his stock falling off in condition or dying of disease, and yet, because the hens are no exception to the rule, the raising of poultry is regarded by such persons as unprofitable. Poultry diseases may be prevented by cleanliness, but not otherwise. The cholera and roup may be cured a dozen times, but unless the houses and runs are kept clean, such diseases will appear as regularly as the periods of the moon.

Poultry is a profitable business, but not under unfavorable conditions.

On old farms, where the hens have had the run of the farmyard for years, there is gradually accumulated a certain amount of decomposed matter from the droppings, which is not distinguishable from the dirt with which it is mixed. This condition is the cause of gapes in chicks and cholera in adults, as has been repeatedly proved by those who have tried the experiment of feeding chicks on board floors, by which means the gapes were avoided. We do not allude to yards in which fowls are confined, but the farm yards, in which they are supposed to have plenty of room. Gapes and cholera are more prevalent in farmyards than in small yards used for confining fowls, for the reason that the small yards are frequently cleaned and turned up with the spade. If the farmyards could be occasionally scraped over, and then thoroughly sprinkled with a solution of chloride of lime or copperas, it would do much to prevent disease. What is better, is to mix an ounce of sulphuric acid with a bucket of water and sprinkle the yards, but it is not as easily handled as the chloride of lime or copperas water. A pound of chloride of lime to ten buckets of water or a pound of copperas to four buckets of water will answer the purpose.

ROUP,

Including colds, canker, diphtheria, etc., is best prevented and often cured by the use of the celebrated Douglass mixture. This consists of

Sulphate of iron,	½ lb.
Sulphuric acid,	1 oz.
Water,	2 gals.

This is to be added to the drinking water in the proportion of a tablespoonful to a pint. Fowls affected by the Roup should be separated and put in dry, warm quarters. The head and nostrils should be well washed with warm water, and also with warm alum water. Give daily half a grain Cayenne pepper with half a grain allspice, in a bolus of meal.

GAPES.

If treated early, a small pill of camphor daily, and also a little camphor in the drinking water, is recommended. When fully developed, the worms should be removed from the windpipe by inserting a loop of horse hair into the organ and withdrawing it while turning it around. Repeat the operation until all the worms are removed.

GENERAL DEBILITY.

For general debility, bad moulting, etc., use stimulating food, with sulphate of iron or Douglass mixture in the water. If the fowls are in general affected with the disease, especially in the case of Catarrh and Roup, it is an excellent plan to thoroughly fumigate the poultry house with sulphur. To do this, close the doors and windows, and burn a small quantity on a shovel. In many such cases the following prescription will be found valuable. It was given to us by a doctor fancier some five years ago, who recommends it as very successful in most cases of disease among the chickens:—

Pulv. capsicum, } Pulv. allspice, }	each 50 grains.
Diluted carbolic acid,	2 scruples.

To form into a mass, add syrup and flour, or powdered gum arabic. To form into pills, 100 of ½ gr. each.

One pill three times a day, or alternate with boluses, as below:—

Pulv. charcoal and yeast,	200 grains.
Flour sulphur,	150 grains.
Syrup of flour,	2 scruples.

To form into a mass, which make into 100 boluses of 5½ grains each. One three times a day.

With Roup, give also three or four drops diluted carbolic acid, washing out nostrils with Castile water, and inject some of the acid into the nose.

CROP BOUND.

The following is recommended:—

Warm water should be forced down the throat, and the crop gently kneaded or worked for an hour, if necessary, until it becomes soft, holding the bill open and the head down; then give a tablespoonful of castor oil, and feed sparingly for a day or two, to prevent permanent distention. If this is not effective, an incision about an inch long should be made at the top of the crop, first removing some of the feathers, and care being taken not to cut any of the large blood-vessels. The contents of the crop should then be removed and the outlet examined, to see that it is not stopped up. The incision may be closed by making three or four stitches, with horse hair or silk, in the inner skin, and the same in the outer. Be careful not to sew the two skins together, as it is almost certainly fatal. Feed on sopped bread, and allow no water for twenty-four hours after the operation.

STRAINED HIP JOINT.

A customer of ours, and for many years a practical breeder, has called our attention to a common ailment in fowls, which we believe has never before been noticed by any writer on poultry. Especially in the large breeds, where the cock is heavy, good laying hens, after two years old, often become so strained and weak in the hip joints that they slide out of position, letting the body fall very near the ground, and making the hen walk like a duck. The cock, seeing the hen in this position, naturally thinks she is courting his attentions, and the weakened hen is thus very much injured. The remedy is simple, and the cure nearly always complete. Tie the two legs together by a string around each at the hip joints, a little nearer than they would be when the bird was standing naturally. They must be tied back of the breast bone, so that they cannot slip out of position. The hen will soon learn to walk, although not so rapidly, using her hock joints, and in a few weeks she will have recovered the full and perfect use of her limbs.

CHOLERA.

This is a summer disease. What Roup is to the winter, Cholera is to the summer. It is a parasitic disease rising from the rapid multiplication of a minute parasite that destroys vitality by preying upon the fowls, as the parasites pass wherever the blood reaches, the liver being the principal point of attack. To cure it we must destroy the parasites, and while there are plenty of remedies, they are too severe, endangering the life of the fowl. Sulphur is the agent by which all diseases may be avoided or cured, but sulphur is insoluble. The fumes of sulphur can be collected in water, which absorbs it, and administered; but we can give sulphur gas in another shape. Hyposulphite of soda is a compound of soda, sulphur, and sulphur gas. It is harmless, is solid, and easily given. It acts as a cathartic, and not only

destroys the parasites, but compels them to pass off. With Cholera, the fowl is weakened and debilitated, and care must be observed not to kill it in the endeavor to cure it.

The first thing to do is to give a teaspoonful of hyposulphite of soda, forcing it, slightly moistened, down the throat of the fowl. An hour afterward give a grain each of powdered mandrake, red pepper, ground ginger, and copperas. Each substance should be finely pulverized, mixed with a little starch or corn meal, moistened, and administered. Place the sick fowl in a quiet place, give plenty of cool water, and leave it until well enough to eat. Then feed on cooked food for a few days, and it will most likely be all right. The symptoms are a nervous, anxious look, drooping spirits, great thirst, and pale or black comb. It comes from filth.

LEG WEAKNESS.

Somehow or other we have received a great many inquiries relating to leg weakness, and the inquirers nearly all state their complaints in this manner :—

"Several of my chicks move about on their knees, and cannot stand on their legs. I *feed well*, and give them every attention." Leg-weakness is occasioned by very high feeding. It is not dangerous nor does it indicate that there is anything wrong with the chicks. It means that they have been forced, and that the increase of strength does not correspond with the growth of the body. A deficiency of phosphate or of lime in the food, which is the bone-forming material, will cause leg weakness, especially if the food is rich in nitrogen, or flesh-forming material. Carbon is the fat-forming substance, and is useless to a growing chick unless it is intended for market. Sometimes, however, the leg weakness is really a slight attack of rheumatism, especially if the weather is damp, but it comes from the same cause—forced growth. No alarm need be entertained, for the chicks generally come up again, unless the food fed is largely deficient in some respects.

How to avoid and cure leg weakness is to feed judiciously. Plenty of meat, which is usually given with scraps from the table, is just the material that pushes the chicks rapidly forward, but meat contains very little of the phosphates. Wheat, of course, contains it, but it is not sufficient when the growth of the chicks is very rapid. Corn is injurious at such a time. But if we will add a substance that supplies the deficiency, we can then feed anything desired. Such a substance is ground bone. With ground bone and pounded oyster shells the chicks will be fully equipped to ward off leg weakness, and but very little trouble will ensue on such a system.

There is one other cause, however, which is a deficiency of green food. Highly-concentrated food given at every meal is too stimulating, and if grass, boiled potatoes, turnips, or any kind of vegetables are fed, it will be better than feeding too exclusively on the scrap diet. In cold weather the green food may be given, if preferred, in the shape of finely cut clover hay, steeped in hot water and fed warm. In fact, any kind of hay will serve such

a purpose if it is cut into short lengths and steeped. Always give a little salt in the soft food. It is as necessary for fowls as for cows or other stock. A little red pepper once in a while is also good, but do not feed it daily, as is often suggested.

LICE.

It is sometimes an easy matter to get rid of lice on fowls, but the poultry house is not so easily managed. During June the lice will be active and increase rapidly. It is no use to attempt to rid the fowls of lice until the premises are thoroughly cleaned, as such labor is lost. If the houses are kept clean, the hens will, with the use of the dust bath, clean themselves. To rid the house of lice, first remove all filth from the roosts, floors, walls, and nests. Scrub the roosts with coal oil, not overlooking a single spot. Take the nests outside, clean them out, and with a white-wash brush apply a light coating of coal oil to them, inside and outside. Now touch a lighted match to the nest boxes and let them burn. No damage will be done, as the oil will be quickly consumed, but such work should not be done inside the houses. Now make a bucket of whitewash, and add to it an ounce of liquid carbolic acid and a pint of tobacco water, which may be made by pouring boiling water over tobacco refuse, and allowing the water to remain over night with the tobacco. Apply the whitewash profusely, and dust Dalmatian insect powder through the feathers of the hens, holding them by the legs for that purpose. Do not use grease on little chicks. Dalmatian insect powder will remove lice from them. Little's Chemical Fluid is an excellent article to use in the place of carbolic acid, it being efficacious and non-poisonous.

VARIETIES OF FOWLS.

SHERWOODS.

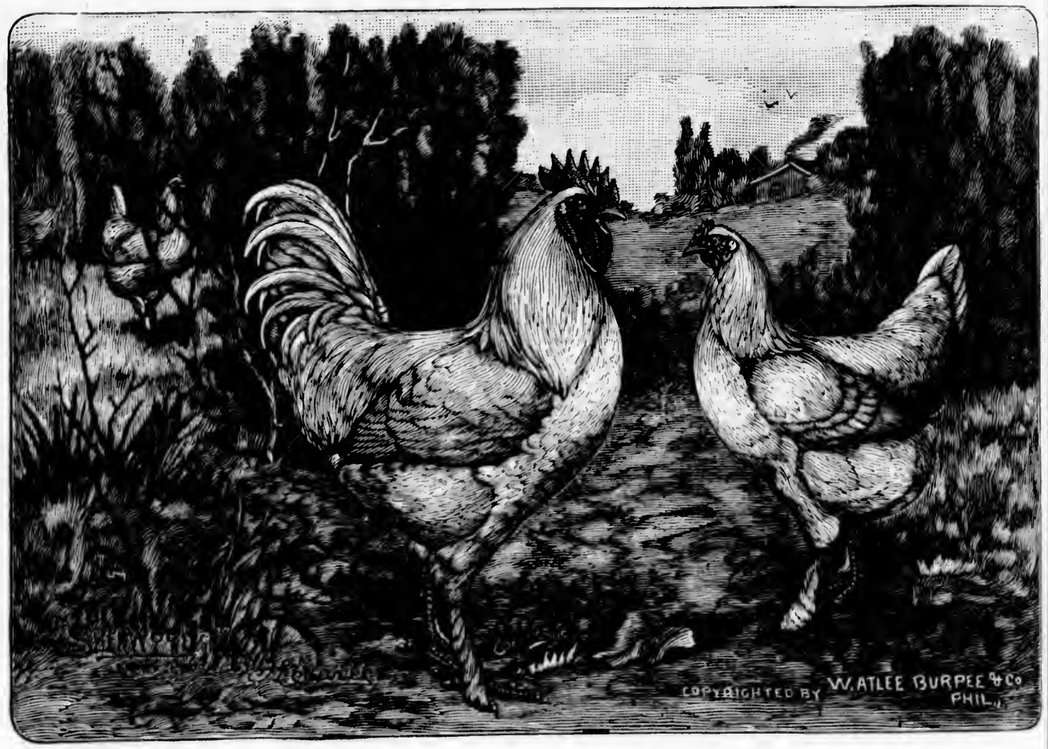
The Best General Purpose Fowl Ever Introduced.

This new breed of fowls is so called from the Virginia plantation of Mr. Timberlake, where they originated from crosses first made some forty years ago. About 1850 there were introduced among the stock bred on this farm some pure White Games from Georgia. During the period of twenty years these White Games and their progeny were allowed to run at liberty on the farm, intercrossing with the stock of Cochin Chinas and Light Brahmas. The Game cocks being more courageous than the Cochins and Brahmas, the cocks of the latter breeds were after some years entirely removed. In succeeding years the white cocks from these crosses were selected for breeding by Mr. Timberlake's mother, who was a very practical poultry raiser. At the time of her death, some twenty years ago, Mr. Timberlake began selecting the fowls with a view of fixing their characteristics in an established breed.

The Sherwood derives from its Light Brahma or Asiatic parentage a heavy body, but is shorter in leg, while also deriving from the Game parentage

fuller breasts. They are very stylish birds; majestic in carriage, with close, compact bodies; yellow bills; beautiful, erect combs of medium size; bright red ear lobes, and white plumage, with yellow legs lightly feathered to the outside toe.

They endure the cold weather better than the Asiatics or other fowls of equal size; the young chicks are also very hardy, the damp weather seeming to have no effect on them. They grow rapidly, mature early, and are fit for broilers at the age of twelve to fourteen weeks; they are of excellent quality

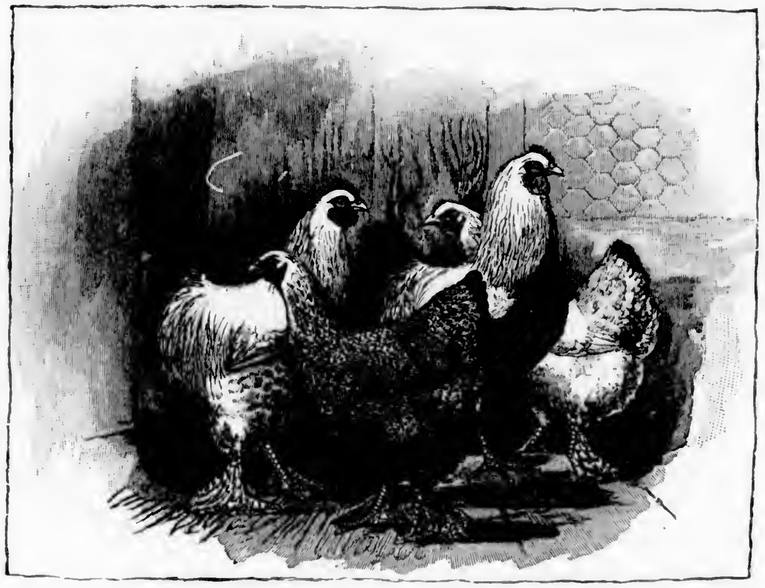


for table use. The Sherwoods are very careful and attentive mothers, yet gentle and tractable to handle. They are very prolific egg producers, and the eggs are of large size and fine flavor and good quality. They are of good size, the cocks weighing 9 to 10 pounds and the hens 7 to 8 pounds each.

SHERWOODS are now being exclusively introduced by us. We will be pleased to have intending purchasers inspect our yards at FORDHOOK FARM. To those at a distance would say that the illustration above conveys a fair idea of their appearance, having been engraved from a photograph.

BRAHMAS.

No breed of pure-bred poultry, from the days of the hen fever to the present, have so universally maintained a front rank in the estimation of all poultry men as the Brahmas. They are quiet in their disposition and very tame. Our late lamented Brahma cock, "Joe Hooker," was almost as affectionate and knowing as a dog. He would come into the kitchen at meal times, and would quietly walk around and eat out of the hand what was given him, but never would he eat anything within his reach that was not set aside for him. Brahmas can easily be picked up anywhere by a child. A three-foot fence will confine them, and no breed in the world is so well adapted to close



LIGHT AND DARK BRAHMAS.

confinement. They thrive well in the smallest quarters. They are excellent winter layers; their eggs are of varied shades. That *pure* Brahmas should lay eggs of one uniform color is an exploded bubble. They are very much inclined to sit, and this is a great drawback. They do not mature early, and are not so desirable for spring market pure bred as when crossed.

They have plenty of loose fluff, and will cover a goodly number of eggs. They should be of large size, but not giants. The days of the "long-legged Shanghai, that could eat off the top of a barrel, and all there is in it," is past. Farmers and poulterers are beginning to realize that utility of form must be studied. It needs no demonstration to prove that it is highly unprofitable to feed corn and wheat to produce such unpalatable parts as neck and leg. Matured cocks of 12 pounds, and hens of 8 to 10 pounds are fully

as large as can generally be had in connection with other meritorious points. One peculiarity of this breed is the pea comb, which, being so small, is safe against the winter's frosts.

LIGHT BRAHMAS.—While Light Brahmas do not appear to be as large as Cochins they are in reality one pound heavier, by standard requirements; this may be accounted for by the loose feathering or plumage of the Cochins. From their first introduction into this country they have steadily gained in public favor. One reason of their popularity is probably found in their general appearance. The white plumage of the body is relieved by the brilliant black markings of the hackle, saddle, wings, and tail. This black, when intense in hue (which it should be), makes a sharp contrast with the pure white of the body. They are splendid winter layers, producing the greatest abundance of fine, large eggs, when other breeds have "gone into winter quarters." They are extremely docile, bear confinement well, and are easily enclosed by a very low fence.

DARK BRAHMAS.—Very similar to the Light Brahma, being nearly as large and of the same form. They are early layers in the winter, hardy, and the chicks mature rapidly. They have very beautiful dark plumage. In the cock, hackle silvery white; striped with black and white feathers on the head; back almost white; the saddle feathers white striped with black; the tail feathers pure black; the breast is solid black. In the hen the hackle is striped with black; on the body each feather is closely penciled with dark, steel gray.

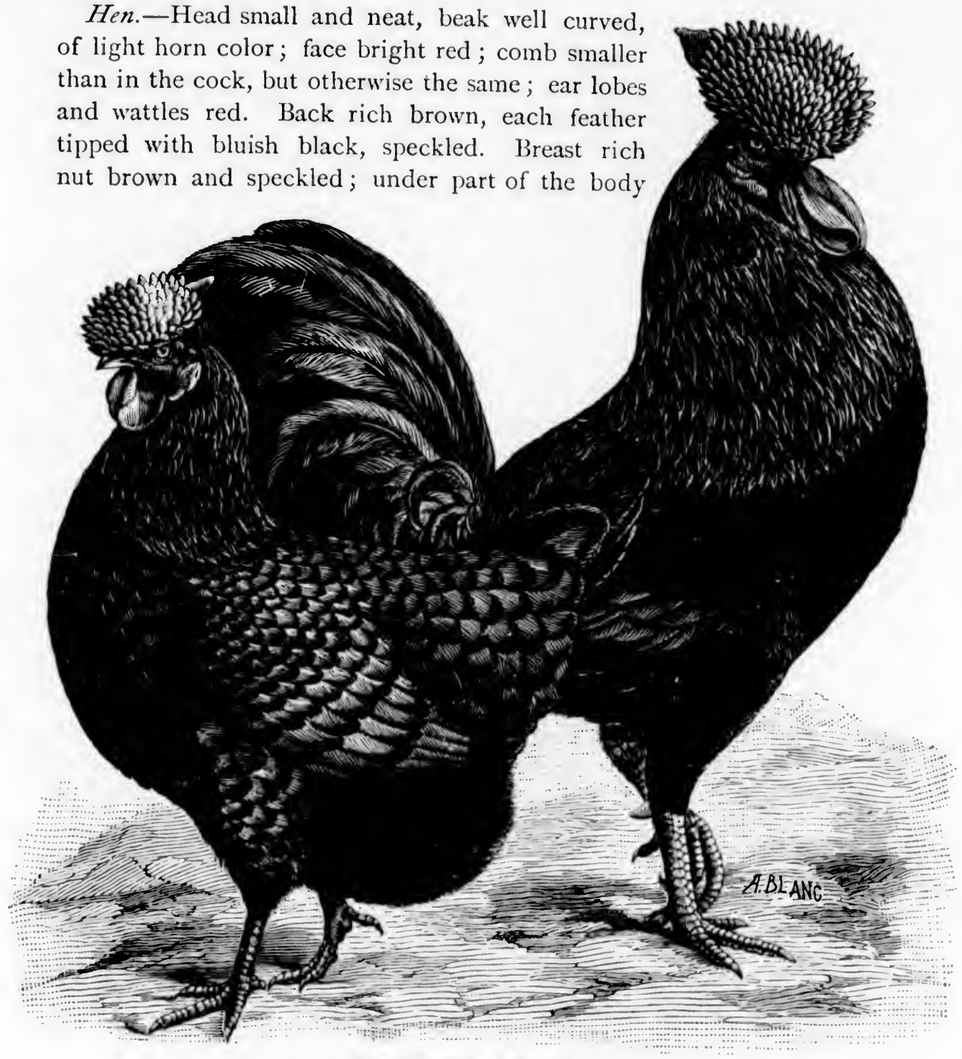
RED CAPS.

From their hardiness and wonderful prolificacy as egg producers, the *Red Caps* deserve all that has been said in their favor. Until recently the Red Caps were almost entirely confined to Yorkshire and Derbyshire, England, where they have been prized as a favorite breed for many years. Since our first importations, they have been steadily gaining in popular favor, until at present there is scarcely a show held without a class for Red Caps. They are non-sitters, but as layers are unsurpassed by any other pure breed. The eggs are white or tinted, of medium size, averaging two ounces, and are noted for being very rich-flavored. Good hens will sometimes lay upward of 200 eggs in a year.

The Red Caps have been admitted to the Standard, and are described about as follows:—

Cock.—Head short and deep; beak dark horn color; face bright red; comb, rose, placed firmly on the head, top full of small points with straight spike behind. Ear lobes and wattles red, of medium size. Neck rather long with abundant hackle falling well over the back; color dark golden red, each feather striped with black through the center. Back of medium length, sloping toward the tail, color black and rich red, saddle feathers long and sweeping, of a deep, rich red striped with black. Breast dark purplish black, under part of body dull black. Wings, bows deep, rich, nut brown, each feather tipped with a bluish black spangle; coverts the same, only the spangle extends further down, forming a solid black wing-bar. Tail black, sickles with rich greenish reflections. Legs black, and shank leaden blue.

Hen.—Head small and neat, beak well curved, of light horn color; face bright red; comb smaller than in the cock, but otherwise the same; ear lobes and wattles red. Back rich brown, each feather tipped with bluish black, speckled. Breast rich nut brown and speckled; under part of the body



PAIR DERBYSHIRE RED CAPS.

lighter in color. Legs light brown, shanks and feet leaden blue. Tail long, pointed, and full. Cock should weigh 7 pounds, hens 5½ pounds; cockerel 6 pounds, pullet 4½ pounds.

The Red Caps are non-sitters and are one of the very best crosses for producing good layers. For this purpose the Red Cap cock should be mated with Brahma, Cochin, Plymouth Rock, or Langshan hens.

COCHINS.

Cochins are large, noble-looking fowls, with an abundance of loose, fluffy feathers, especially in the hens, thus making them the very best mothers. Mature cocks should weigh 10 to 13 pounds, and hens 8 to 10 pounds; small weights should not be tolerated, neither should extra heavy birds be bred, if, as is generally the case, they are correspondingly badly proportioned. The legs should be abundantly feathered to the toes, but not "vulture-hocked." They are very docile, can be picked up by a child, and are easily confined. They are rather poor foragers, and must be fed liberally. They are good winter layers. Their eggs are of various shades. They are very much inclined to sit and hard to break. On account of their large size they are invaluable for crossing, whereby they can be improved in early maturity and flesh. They have single, erect combs, of fine texture. Recently a strain of Pea Comb Partridge Cochins has been introduced, and it is claimed for them that they can better withstand cold winters. We fear, however, that should this variety become popular, the distinct types of Brahmas and Cochins would be lost—merged into one common mixture. Cochins have so long been bred almost exclusively for large size and fashionable form and markings, that the economic qualities have been neglected. Much can be done in the way of improving their laying, etc. The varieties are the BUFF, PARTRIDGE, BLACK and WHITE COCHINS.

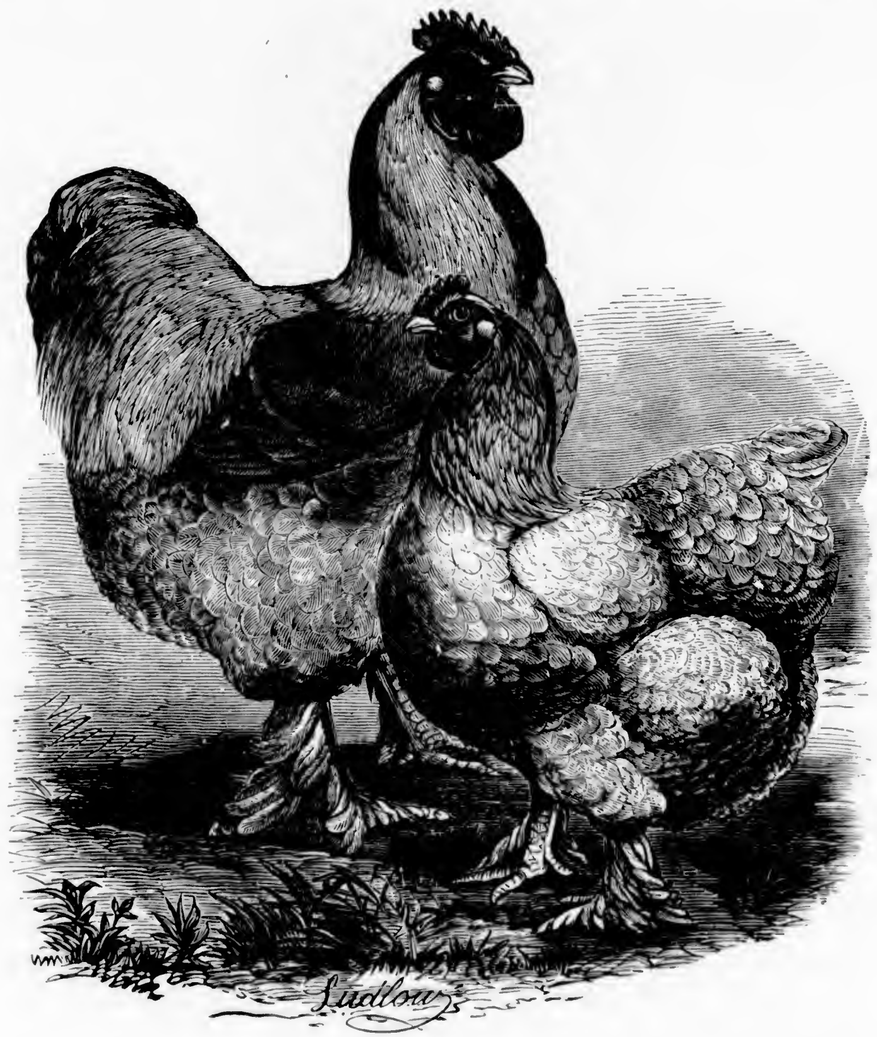
PAIR OF WHITE COCHINS.

BUFF COCHINS.—The great fault which beset this breed originally (the constant appearance of dark feathers) has been overcome at last; by careful mating and breeding they have reached that state of perfection where the fancier has comparatively little trouble in breeding them to feather.

Their handsome golden buff color, fine form, and stylish carriage win admiration everywhere. Their plumage is of a clear, beautiful shade throughout; the neck, saddle, hackle, and tail-coverts being of a darker and richer shade in the cock, and the hackle of the hen being the same shade as the male bird. They are large, fine birds; the cock should weigh from 9 to 11 pounds at one year. Both cocks and hens should be loose feathered, and thus appear much larger than they really are. Hens should weigh from 8 to 9 pounds at one year old. Cochins will thrive well in the smaller yards, and under such unfavorable circumstances as to preclude the

successful rearing of other fancy breeds. They are good winter layers and make careful mothers.

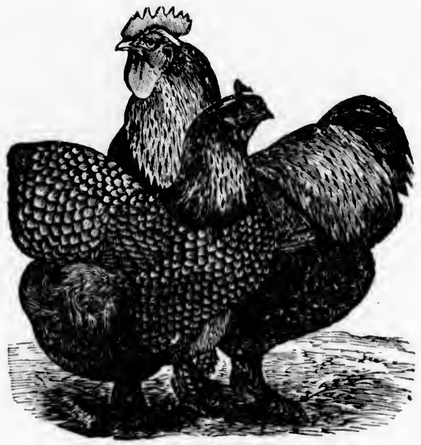
PARTRIDGE COCHINS are very aristocratic, with the deep black breast and beautifully resplendent and varied plumage of the cock, and the exquisitely penciled hen. For small city yards a more pleasing breed could scarcely



BUFF COCHINS.

be desired. WHITE COCHINS, being of a pure, snowy whiteness throughout, do not present the difficulties to the young breeder which are sure to be experienced in raising the other varieties of Cochins, and hence are one of the best varieties to start with. All Cochins possess the same prominent characteristics, and the amateur should select the variety best suited to his

fancy. BLACK COCHINS were established about fifteen years ago and were supposed to be one of the coming breeds; but, not having as many good



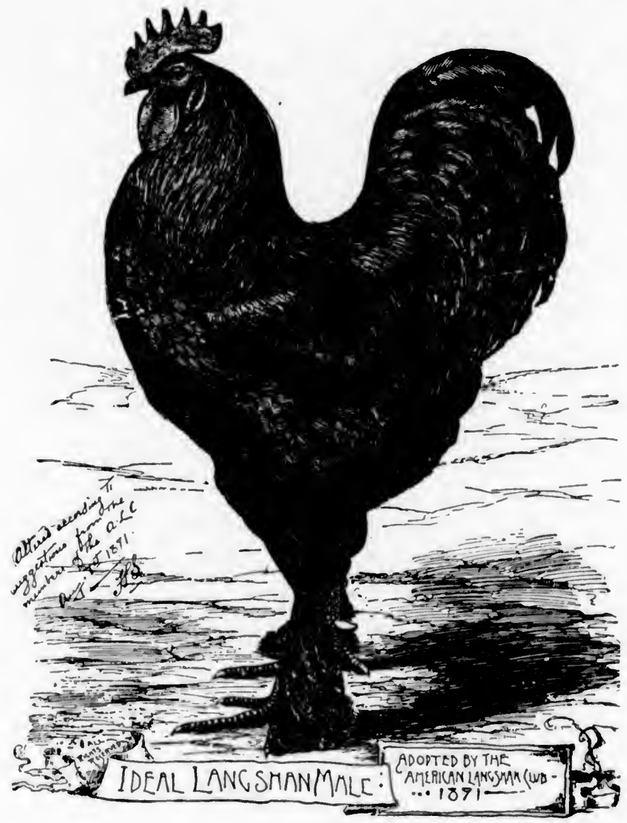
PARTRIDGE COCHINS.

characteristics as the other varieties, soon fell in the background, and at present are almost extinct.

LANGSHANS.

The more Langshans are tried the better they are liked. A strong prejudice existed against them on account of their dark legs, but as sensible people are reflecting that the legs are the most useless part of the fowl, as far as table purposes are concerned, the breed is becoming more popular. The Langshan is a large fowl, nearly as large as the Brahma, and yet the pullets lay exceedingly early, in fact, some claim they lay as early as the Leghorn, nor is this all, for they will lay as steadily, after they begin, as other fowls. Major Croad, the original breeder, said, "A pullet I once bred I can say with certainty commenced laying a fortnight before Christmas, and laid 147 eggs without interruption." For table use they are fine. The flesh is cross-grained and tender, dresses white, and the body is full, compact, and nice looking. For crossing purposes they impress themselves very strongly and make a good cross with any breed. Their plumage, carriage, and form are simply magnificent. The lustre of the black plumage is heightened by a greenish cast, which adds a polish and brilliancy unsurpassed. They have bright red single combs. The beak and legs are dark, with flesh-colored variations along the lines of the mouth and lower part of toes and sole of foot; eye dark; ear lobes and wattles bright red; tail full and flowing, carried rather high and forward, and furnished with good-sized sickles. It is difficult to breed these birds without the reddish feathers which make their

appearance in the breast, often from the very best strains. The Langshans



are very prolific and mature early. Although not given to being broody, they are good sitters and excellent mothers.

LEGHORNS.

Of late years Leghorns have attained a wonderful popularity. And well deserved it is, too. They are without doubt the best layers. They are non-sitters, although, as in all non-sitting varieties, a hen will occasionally take a notion toward incubation, and will often perform her unaccustomed duties very satisfactorily. Leghorns lay as many as 200 and even 250 eggs per year. The pullets begin to lay at 4½ and 5 months. The cockerels will crow at 7 weeks old, and a very amusing sight it is to see a large flock of chicks at this age. They very soon learn to run after the hens. From the very eggs, almost before "their mother knows they are out," they are the liveliest of all chicks. They are splendid foragers, and after eight weeks old they generally pick up all their own food among the

wheat stubble, around the barn, etc. The eggs are pure white, rather thin shell, and nearly transparent. They are not a large breed, but where eggs are desired are all the more profitable on that account; *i. e.*, with less machinery to feed, they will shell out larger results than any other breed. The cocks weigh 4½ to 6 pounds, and the hens 3¾ to 4 pounds. They are very hardy and easily raised. For market, although not large, they are very presentable, with bright yellow legs and skin. They have high single combs, which in this climate are apt to get frozen in winter. This spoils their looks, but does not hurt their breeding qualities. No breed will so improve the laying qualities of barnyard fowls as Pure Leghorns. A cross of a White Leghorn cock on Light Brahma hens makes excellent farm chickens, early matured, good size, fine quality of flesh, and excellent layers.

WHITE LEGHORNS were the first introduced, and are the most generally disseminated. They should be pure snowy white throughout, and entirely free from any colored feathers or a shade of yellow. Their ear lobes should be solid white or creamy white, and in this particular good strains breed remarkably true. Their combs should be of medium size, perfectly erect and evenly formed, deeply serrated with five prominent points, wattles pendant, legs bright yellow, carriage proud and upright.

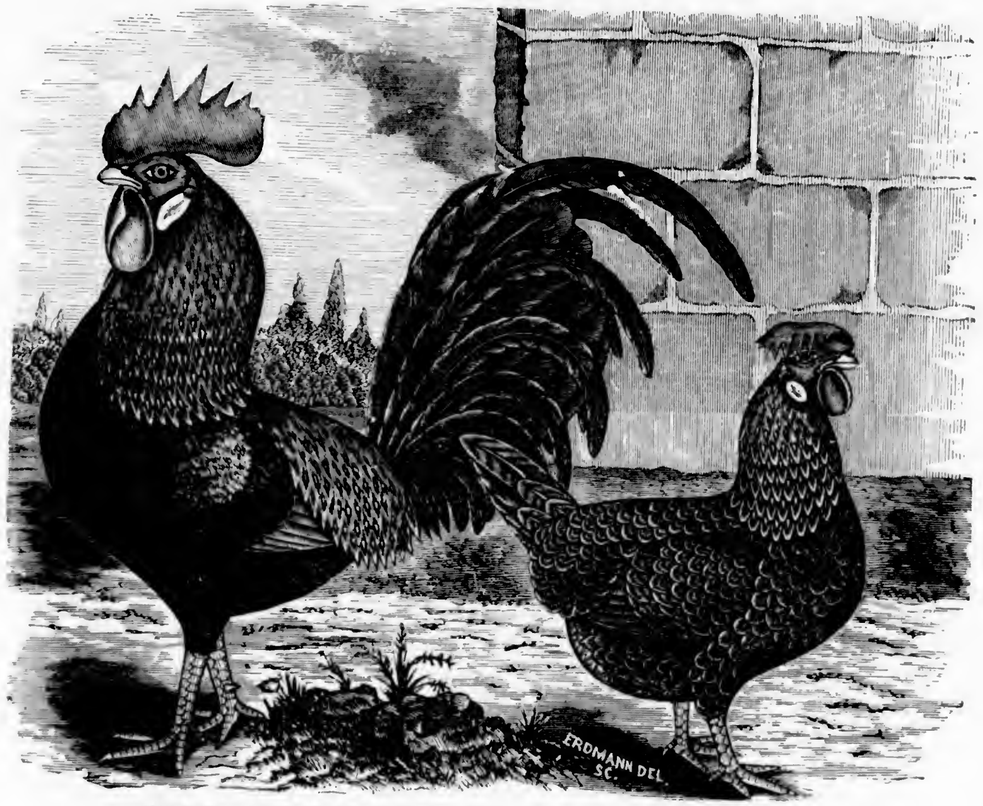
BROWN LEGHORNS are of more recent introduction, but are already the most popular. They are very beautiful, resembling the Black Red Games in plumage, and from their fighting qualities we have reason to believe they contain some game blood. We well remember our first experience with them. We had three favorite cocks, two of which were placed on one farm until one should be mated to another lot of hens. No sooner had they escaped from their respective cages than a terrible fight ensued, and before they could be separated one was killed. The Brown Leghorns are shorter in the legs and rather heavier bodied than the whites. They have bright yellow legs and skin, and are very palatable as table fowls. They are excelled by none as layers. One hen owned by a friend, who kept a careful record, in ten consecutive months of 1876 (including February, when she was rather "under the weather"—which, by-the-by, was very severe—and only laid eight eggs) laid 223 eggs. This hen was not selected, but was the only one the party owned of this breed. The following is the record:—

First month, 23; second month, 8; third month, 22; fourth month, 28; fifth month, 27; sixth month, 26; seventh month, 24; eighth month, 24; ninth month, 23; tenth month, 18; total, 223.

In England this breed is becoming very popular, although as yet quite rare. They are pre-eminently an American breed. We have exported them ourselves to England, as have also other breeders. L. Wright, in his *English Book of Poultry*, says, "We consider them *the best layers we have ever met with.*" They have always been our own favorites, and wherever introduced they soon take the lead for eggs, on account of the immense

quantity and admirable quality of same. They have all the desirable qualities of this breed to a pre-eminent degree. We give below a letter received from a good breeder of this variety, which demonstrates an important fact.

"I will write you a word about the standard as now given for Brown Leghorns. There is just one fault here: a solid white ear lobe and the plumage (standard) of this variety cannot consistently go together without white feathers being made allowable, or dark legs not a disqualification; but



CENTENNIAL PRIZE BROWN LEGHORNS, BRED BY W. ATLEE BURPEE, PHILADELPHIA.

white ear lobes—*spotless white*—and yellow legs cannot be made to breed; it is altogether *inconsistent with natural laws.*

"In a certain number of the *Poultry World* there appeared an article in which the writer stated that the original jungle fowls were nearly of the plumage of the Brown Leghorns, and some have willow legs, and some white ear lobes; to prove, doubtless, that it was natural to have this white lobe. I inquired, in the succeeding number of the *Poultry World*, whether it was the yellow or dark-leg birds that had the white ear lobes, but have

never learned; there is too much trying to cover up the defects of the standard as given to Brown Leghorns. The most open confession I have ever seen is in an article in January 22d number.

"I am now running a strain of Brown Leghorns, direct descendants of the W. F. B. S. crossed on natives, and find stamina much improved, and when I get them where I can rely on them, I will have a strain of Brown Leghorns that will not lose tail feathers in summer, nor give dark legs, but a type just to my own liking. I want lobes one-third surface white, no more. But by all means, Brother Burpee, insert in your book an open remonstrance against the wholesale slaughter of valuable points and desirable qualities just to cater to the wants of a few fanciers like ——, who had so much to do in compiling the standard, that he got in what has just ruined him, and I am glad of it. In the year 1875, in August or September, he had not 25 hens or cocks but were disqualified, on account of white feathers. I know this to be true, and am heartily glad of it."

The writer of the above is only too true in his statements. Much has been done to injure the fair fame of the Brown Leghorns, by advertising solid white ear lobes, and sending out birds with nearly red lobes. Raising, as we do, hundreds of Brown Leghorns, from the most carefully mated stock, we every year raise birds that are throughout free from any white tinge, with bright yellow legs and solid white lobes, but they are scarce. We consider the Brown Leghorns as difficult a breed to handle, with a view to exhibition purposes, as the Dark Brahmas, and requiring equally as much skill. Hens with pure white ear lobes are easily produced from good strains. The trouble is with the cocks. If the majority of the cocks have ear lobes two-thirds white and about ten per cent. pure white, with no corresponding defects, it is as good as can be expected at present. "Truth will out," even if by letting it out we tread on some tender toes, yet it is our only true plan in writing for the poultry public. We regard the Brown Leghorns as too valuable a breed to be altered by crossing, or to be ruined in stamina and important excellencies by a mad rush after white ear lobes, "regardless of cost." In mating, always keep in view the one great quality that endears this breed to the people—the eggs.

Black Leghorns.—These are solid black in plumage, with pure white ear lobes and erect combs. They, like all black fowls, usually have dark legs. They are the smallest of the Leghorns, and although good layers, are no better than the others. They look too much like degenerated black Spanish, and it is our opinion that, unless improved, they will soon sink into oblivion, as a variety not worthy of distinct cultivation.

Dominique Leghorns.—These fowls are certainly very pretty, being of the uniform Dominique color, contrasting nicely with white ear lobes. The finest fowls we raised in 1876, and exhibited at the Centennial, were perfect as regards Leghorn characteristics and color, but had a few black spots over the yellow legs. We have had birds of this breed with pure yellow legs, but

they were faulty in the ear lobes. This variety can never compete in popularity with the Brown and White Leghorns. Some breeders claim that they are the largest of all Leghorns, and we have purchased birds of such stock which were very large, too large for pure Leghorns, and plainly showing a cross, also having nearly or quite red ear lobes. We have consequently discontinued breeding them.

Buff Leghorns.—The Buff Leghorn is growing in popularity every day. The color is very attractive, and those possessing a true, solid buff have something to be proud of. They are layers of a large, white egg, are non-sitters, and possess a great many characteristics of the Browns, although we do not think they will ever supersede the Browns. The English idea as to color is orange, the cocks much darker than the hens. As yet it is hard to breed these birds true to color, as we have seen numerous specimens in the poultry shows during the year 1891 and cannot say that we saw a pure Buff male or female in the entire lot, but all having some dark feathers in their plumage.

WYANDOTTES.

The *Fanciers' Journal* gives the following history of this fowl:—

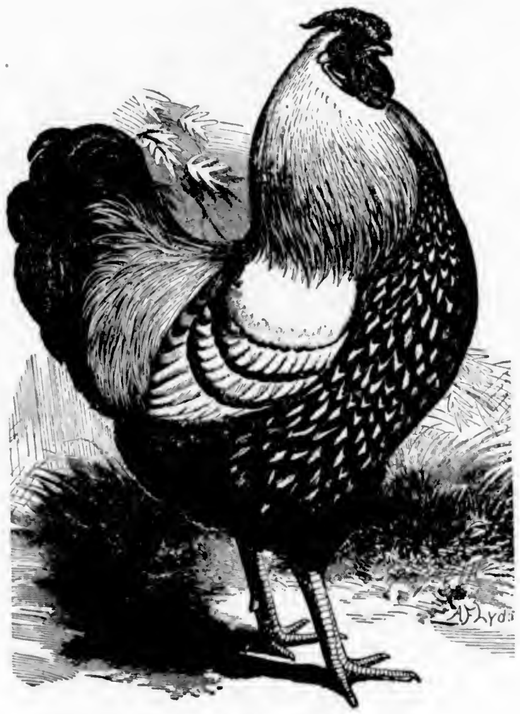
"There are many reasons given why the Wyandotte fowls are considered one of the best for general purposes. In the first place, it merits our admiration because it is distinctly an American breed—originated in this country; second, it is just of the right weight for an admirable market fowl—from six to eight pounds when standard; third, it is probably the best layer of all breeds that hatch, while not being a persistent hatcher; fourth, it is as beautiful as any; fifth, it matures quicker for broiler or market purposes than any of the so-called heavy breeds, and is an exceedingly hardy breeder to rear. More and interesting points in its favor might be cited. It kills yellow skinned, even when not fat—that is, if pure bred—carrying the fat in the interstices and under the meat, while most birds of other breeds place the adipose right beneath the skin.

"Of late it has pushed its way to the front of all breeds in America and indisputably lays claim to first recognition. The barred Plymouth Rock was always considered the farmer's fowl of America, but the Wyandotte has the inside track at present, and its merits must by comparison place it permanently in the winning position.

"No more satisfactory argument goes to show its supremacy than the fact that of all the advertisers in the poultry journals, over ninety per cent. include the Wyandotte on their list of breeds. Even in England, the home of the Minorca and Dorking, the Wyandotte stands second. The order of popularity in this country stands as follows: Wyandotte, Plymouth Rocks, White Wyandotte, Light Brahma, Langshan, White Leghorn, Brown Leghorn, White Plymouth Rocks, Games, and so on to the end of fifty-two different breeds. In consideration of these conclusive facts, we have no apology

to make in favor of any breed to any one desirous of obtaining the best general utility fowl. Like all good breeds, the Wyandotte does not tolerate neglect. It requires steady care, and a knowledge of how to breed them pure and successfully, but if so bred it gets there in all departments of usefulness.

"Then its name, aside from the many excellent qualifications it possesses, merits our admiration. Mr. F. A. Houdlette, than whom we have no better authority on this noble American breed, says this as to naming it: 'The breed originated near the shores of Lake Huron, in the vicinity of Detroit,



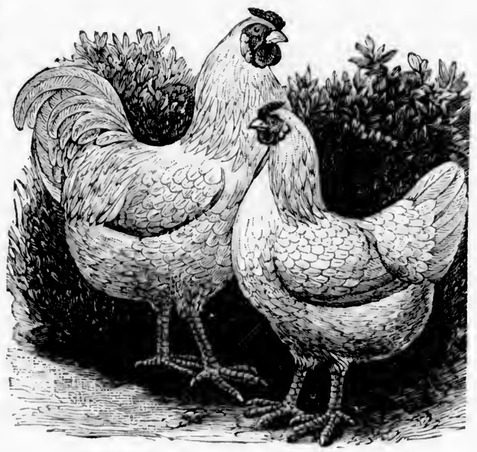
TYPICAL WYANDOTTE COCK.

and in that locality among the first to raise them was one of the first breeders of that time, though we don't hear so much of him to-day, Mr. Whitaker, of North Adams, who was well known through that section. I made up my mind that time that some of the Indian names would be best.

"'In looking up the different tribes that lived near and around the lakes, especially near Detroit, I found that the Hurons and Wyandottes occupied nearly all that territory. The Wyandottes were the noblest of the tribes. I adopted that name for my part, and intended to push it for all it was worth. When new names came up in 1883, the Ambright Columbias and Wyandottes were presented. Suffice it to say that the Wyandotte was accepted, and,

perhaps, I have the honor to be the one who placed that name before the public.'"

WHITE WYANDOTTES.—The well-deserved and almost unparalleled popularity of the *Silver-laced Wyandottes* promises to be fully equaled in this new candidate for public favor. Although of very recent origin, the White Wyandottes breed remarkably true. They resemble the Laced variety in form, shape, and general characteristics, but in plumage are *a pure snow white*. The bright red faces and ear lobes and rich yellow legs, contrasting with the fine form and white plumage, make them a very handsome breed. They mature quickly, and their full-breasted, plump bodies, yellow skin and legs, will make them valuable as table fowls, while as egg producers they are probably only excelled by the *Minorcas* and *Red Caps*. They make good mothers, being kind and gentle, and are also good foragers.



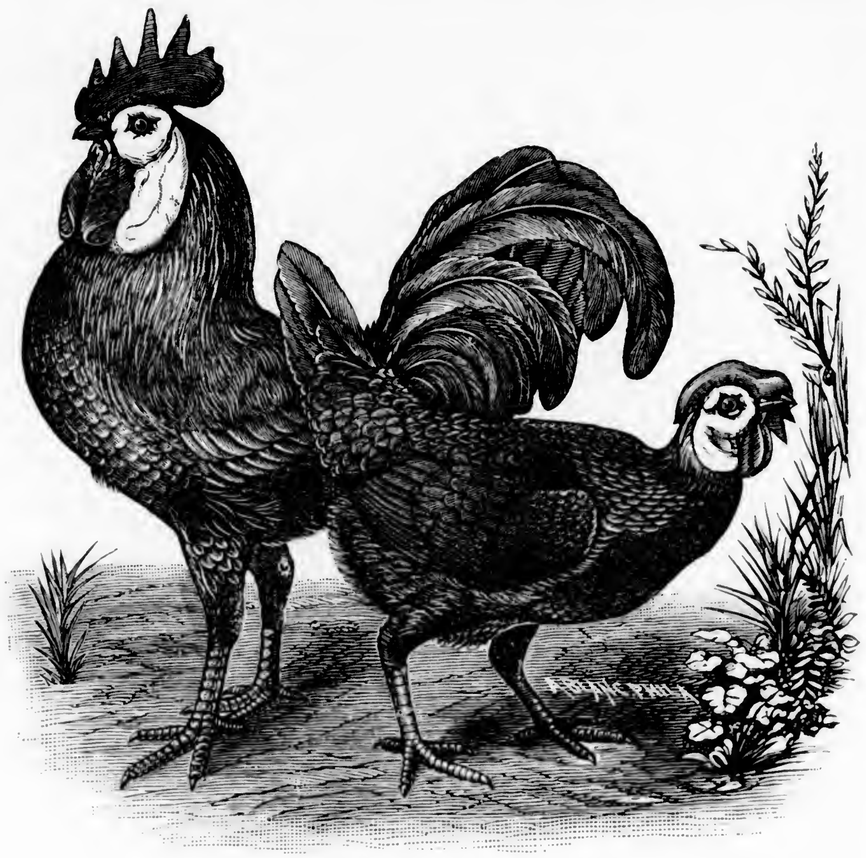
A PAIR OF WHITE WYANDOTTES.

GOLDEN WYANDOTTES.—This breed originated in Wisconsin by crossing the Winnebagoes on the Silver Wyandottes, and are described as follows: Head short and broad; neck graceful, rich golden bay color with a clear black shaft running through the center of each feather to the extremity; back, deep red bay in color; saddle same color as neck; breast, golden bay centers, web black, primaries black with bay edgings, secondaries black with lower part of web bay color, coverts black and golden bay with a narrow stripe along the edge which widens toward the tips and forms a double spangled bar across the wing; wing bows heavy bay, tail sickles glossy black, the smaller coverts black. The females have the same general shape of head, with a golden bay plumage; neck a rich yellow with black stripes through the centers; back shows small, rich, deep yellow centers evenly laced with black; secondaries and coverts the same; tail, same as male. As a class, the Goldens stand high; good layers, good sitters and mothers, and a fine table and market fowl.

BLACK SPANISH.

The White Face Black Spanish are one of the oldest pure breeds. They are everlasting layers of very large eggs, of excellent flavor. The yelk of the egg is not larger than of ordinary eggs, the white, or albumen, predominating. They are very hardy if properly bred, the only danger being from their

large, erect, single combs, which will become frozen in very severe weather. They are very high in body, with fine, stylish carriage. Their legs are of a lead color, becoming lighter with age. Breeding in-and-in also produces pale legs, and then a cross should be made with a very bluish-black-legged



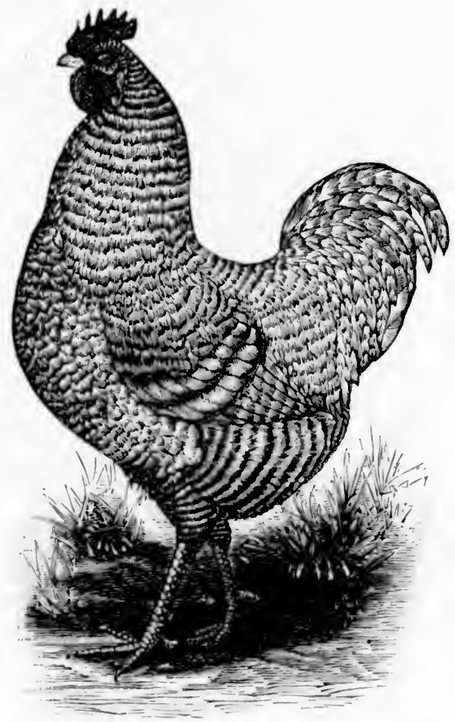
PAIR OF WHITE FACED BLACK SPANISH.

cock of fresh blood. Their white face and long, serrated comb, extending out almost to the end of the bill, are well depicted in the accompanying cut. They are very poor table fowls, but their fine eggs entitle them to a high rank among the breeds of domestic poultry.

PLYMOUTH ROCKS.

Plymouth Rocks, for a "general purpose breed," are unsurpassed, desirable alike for eggs and early market chicks; while they neither lay as many eggs as the non-sitting breeds, nor attain the great size of the Asiatics, yet they most nearly combine the excellencies of each of these classes of fowls, and where one breed alone is kept, it would be hard to make a

more suitable selection. Their origin is generally believed to have been from a cross of the Black Java and American Dominique. Certain it is that they possess the good qualities of the latter, with increased size. Their plumage is an even Dominique color throughout, the cockerels being several shades lighter, have bright yellow legs, and are first-rate table fowls. Their many good points can scarcely be over-estimated. They are a "general purpose" breed, and are the best farmer's fowl, take them all-in-all, yet produced. They are remarkably hardy and healthy, excellent foragers, and are not high-flyers. The cocks weigh nine to eleven pounds

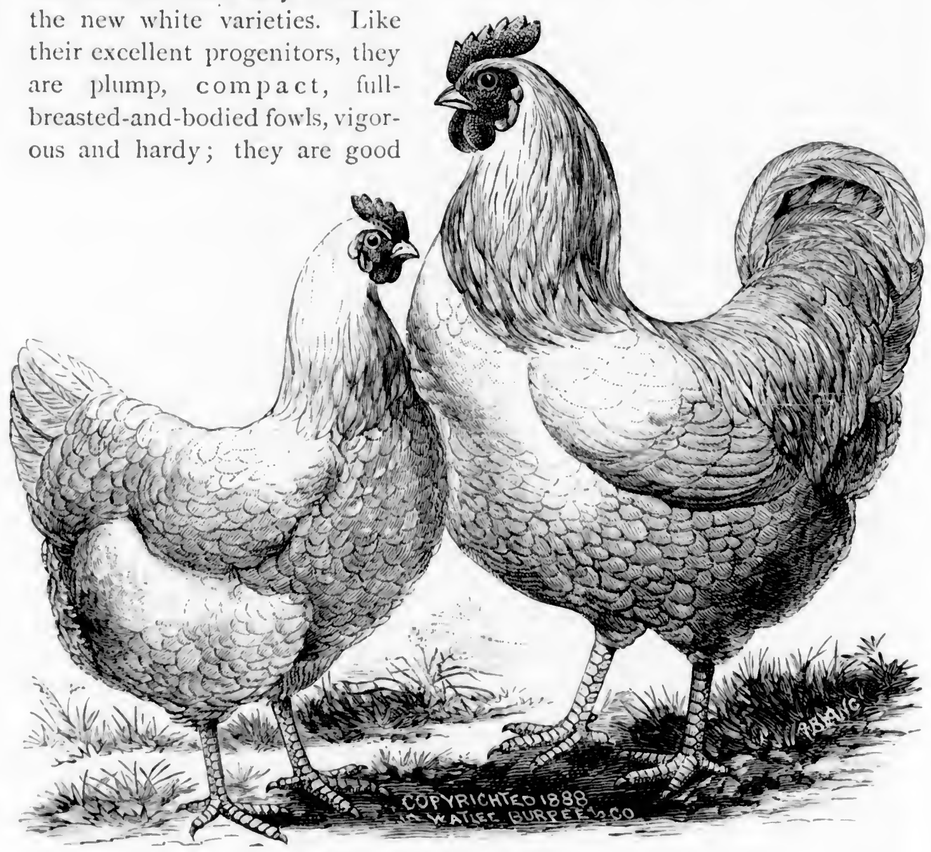


PLYMOUTH ROCK COCK.

and hens seven to nine pounds. Their plain, Quaker-like attire is a suitable every-day work dress, and even farmers, who have an inborn dislike to "fancy chickens," cannot but admit that the pure bred Plymouth Rocks are far ahead of any cross for farm stock. Every farmer will find a trio of the fowls a profitable investment, while fanciers will find no breed of fowls in so great demand.

WHITE PLYMOUTH ROCKS.—One could not conceive of a more handsome or appropriate companion for the well-known Plymouth Rocks than these "White Rocks." Competition ranges high between the new breeds—White Rocks, White Wyandottes, White Langshans, etc.—quite a struggle being

carried on by their special advocates as to which shall be the "cock of the walk." The White Plymouth Rock is an offshoot or sport from the Barred variety and originated in Maine. They have advantages over their "colored cousins" in the matter of mating and breeding; and these advantages will be a great help to the young fancier, and also to those who are contemplating embarking in the poultry business, but who have heretofore dreaded breeding fancy fowls for sale and exhibition on account of the difficulties of judiciously mating them for such purposes. The "White Rocks" breed more true to color than any other of the new white varieties. Like their excellent progenitors, they are plump, compact, full-breasted-and-bodied fowls, vigorous and hardy; they are good



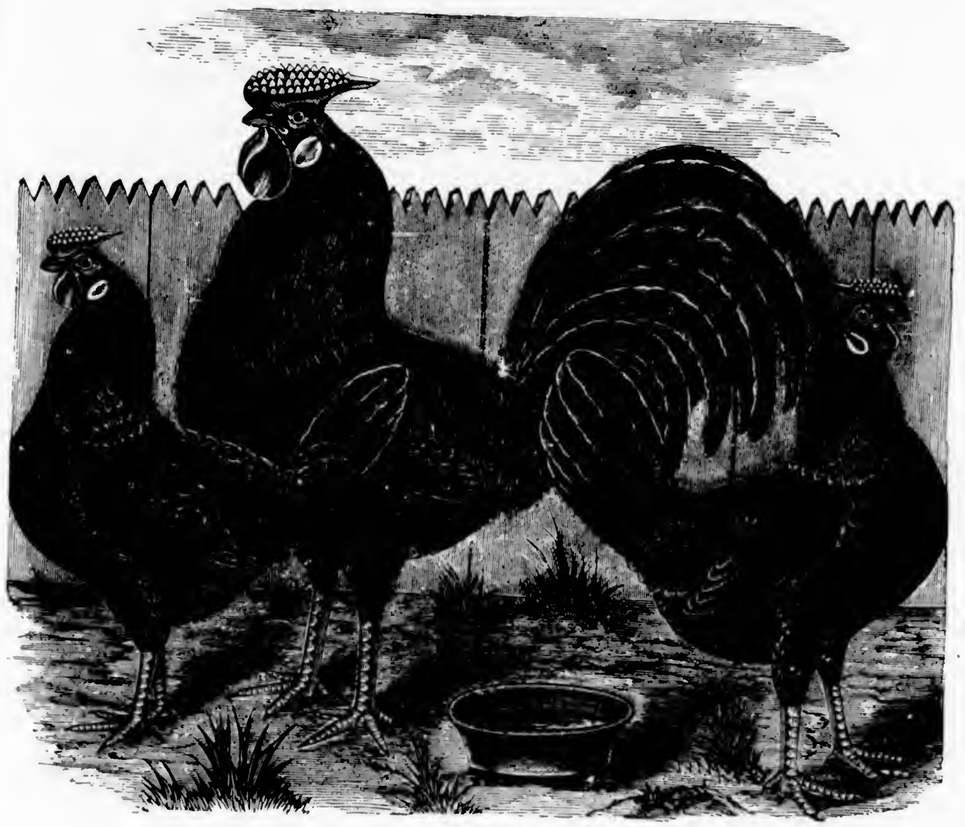
PAIR OF WHITE PLYMOUTH ROCKS

layers and handsome in appearance and carriage, showing well on the lawn or in the exhibition coop. Their bright red combs and heads contrast agreeably with their snow-white plumage. Having so many good characteristics and essential points of an ideal breed, it will be but a short time until they become widely known.

HAMBURGS.

Hamburgs are a very popular breed of non-sitting fowls. They are unrivaled in variety and beauty of plumage. Our illustration (prepared expressly for THE POULTRY YARD) well represents an imported trio of the Black Hamburgs, bred by the Rev. W. Sergeatson, the most celebrated English exhibitor of this variety.

All Hamburgs possess the same general characteristics. Stylish and active in carriage, slender, rather short, blue or slaty-blue legs, with deep red rose



BLACK HAMBURGS.

combs and close-fitting, pure white ear lobes. They require free range, and are then easily kept, as they are excellent foragers. They will lay upward of 200 eggs in a year. While their eggs are not so large as those of the Leghorns, yet, as long as eggs are sold by the dozen this makes little material difference in supplying the market. Mr. A. Beldon says of their early maturity, he has found that pullets of the penciled varieties lay at five months; the spangled not quite so early. The varieties of Hamburgs are

the silver and golden penciled, the spangled and the solid black. The Blacks are the largest of all, and lay the largest eggs. They are also considered the most hardy. A great fault with many Black Hamburgs is a tendency to white on the face. This should never be tolerated. The face must be one rich, deep red, like the wattles, contrasting strikingly with the pure white ear lobes. We have also seen fowls awarded a premium as Black Hamburgs that showed very plainly the carriage and form of the Black Spanish.

GAMES.

Games are generally familiar to every one, and are by many considered *the* fowls. Even those who rightly disapprove of the pit and its uses admire a really *Dead Game* Cock. No breed can equal them in true symmetry, elegance, and style, with fearless expression. They are light-feathered and all muscle. A Game fowl will weigh much heavier than it appears. Cocks of good size will weigh 6½ pounds, and hens 5 to 5½ pounds. Their flesh is unsurpassed, being the finest flavored of any breed of fowls. They are excellent layers of fine, rich eggs, much esteemed. The hens are the very best mothers, and will faithfully protect their young broods. They are easily reared, and are undoubtedly a very profitable breed for economic purposes—the only drawback for domestic use being their fighting qualities. But these latter adding so to their beauty and elegance, besides the extra quality of their flesh, surely warrant a little extra trouble with the young stags. When the young stags are troublesome in fighting each other, they can be penned in small coops, arranged in tiers, and each one left out occasionally in a small yard to exercise. There is always a lively demand for pure Games of fine strains at very satisfactory prices, and they are consequently one of the most profitable fancy breeds. The varieties of Games are numerous; our limited space does not permit a description of each. The most prominent are the Black-Breasted Red, Brown-Breasted Red, Duckwings, Derby, Piles, Sumatra, White, Henny Games and Indian Games.

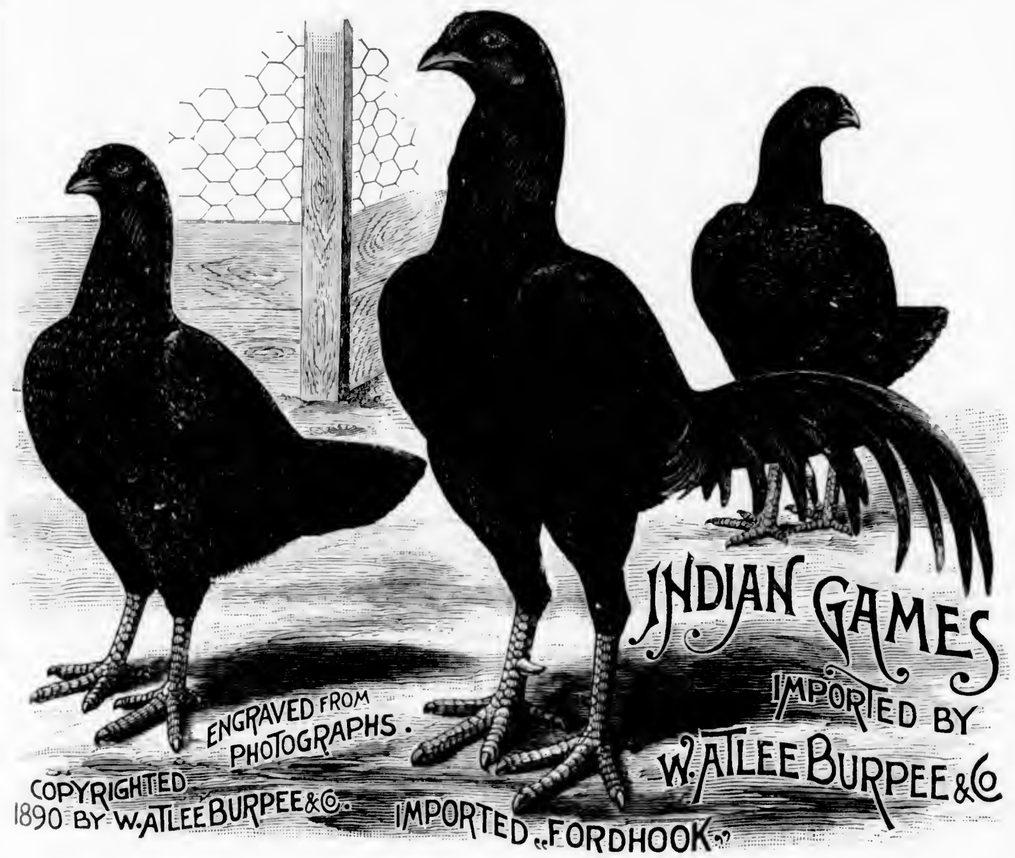
Black-Breasted Red Game Stag.

Indian Games.—No breed ever introduced has created such a furore among fanciers as the Indian Games, and they are bound to be of great value to the farm-poultry interests of the country. The illustration herewith was accurately drawn from a trio out of the two yards imported by us direct from Mr. Whitfield, by steamship "Minnesota," the shipment

of which to this country was favorably noted in the London *Fancier's Gazette* of March 21, 1890.

The true Cornish Indian Game is a most attractive and stylish bird. Their beauty can hardly be described—the closeness and hardness of the plumage giving them a lustre seldom equaled, while their every movement is indicative of high breeding. The graceful outline and proud carriage of the cock (and hen as well) always excite admiration.

While so pre-eminently a fowl for fancy, they cannot fail equally to



delight the poultry-farmer. As a superb table fowl they are unexcelled; they have exceptionally broad, deep breasts and are heavily meated throughout. They are much weightier than their apparent size would indicate, cocks weighing 9½ to 10½ pounds each and hens 6 to 7½ pounds each, when in ordinary breeding condition. Their flesh is of the finest quality, while they mature quickly and, consequently, will be invaluable for crossing. At the great Birmingham show of 1888 a couple of Indian Games carried off the prizes for the best exhibits in the dressed poultry section. An

experiment in crossing an Indian Game cock on Partridge Cochin pullets resulted most satisfactorily. When only six months old the chicks were heavier than their mothers, full-meated, and with flesh of the most delicate color and delicious quality.

They are moderate layers of large, brownish-white eggs. The hens make excellent mothers if allowed to sit, while they can readily be broken up in two or three days when inclined to sit, and it is a remarkable fact that they will then begin to lay again in about a week. The young chicks hatch out very uniform in size and markings; they are very sprightly and extremely hardy, growing quickly and maturing early. They are very free from disease, have strong constitutions, and are easily raised. They are excellent foragers if allowed their liberty, and yet thrive splendidly in confinement. Altogether, aside from their beauty and "fancy points," considered economically they are certainly unsurpassed, and we are inclined to think unequaled. When placed on market their fine appearance as dressed poultry will secure ready sales, while the superb quality and rich flavor of the meat should command an extra price.

Markings.—The plumage of cock: breast, under body, and thighs are a green, glossy black, with brown crimson shafts to feathers; back, neck, and saddle hackles a mixture of rich, green, glossy black with a brown crimson, the former color predominating; wing-bay, chestnut with metallic green, glossy wing-bar; tail, green, glossy black. Of the hen: ground color, chestnut brown, with beautiful lacing of medium size of metallic green, glossy black. Shank in both sexes yellow or orange, the deeper the color the better; face, ears, wattles, and comb a rich red; beak, horn color or yellow striped with horn. The body is very thick and compact; very broad at shoulders. From the above brief description our customers can form an idea regarding the plumage of the Indian Games.

POLISH.

The Polish Fowls belong to the non-sitting breeds, and are excellent layers. Their flesh is very fine, tender and juicy. They are reasonably hardy, if kept free from wet and dampness, which they cannot stand. They bear confinement well, better than any others of the laying breeds, and can be bred successfully in very small quarters. They are very tame. As an ornamental fowl they are *ne plus ultra*, and combining, as they do, so many good qualities, are excellent for a gentleman's park, while for farm use they cannot equal the Leghorns. The general form and markings are well depicted in the accompanying cut of a trio of White-Crested Black Polish. The varieties of Polish are, the White-Crested Black, pure White, Golden, Silver; the three latter being both plain and bearded.

For a gentleman's hennery, where a plentiful supply of fresh, rich eggs is desired, we know no more ornamental or "striking" variety of fowls than the White-Crested Black Polish. These fowls are entirely black in

color, of a rich, glossy shade, excepting the crest, which is pure white with only a few black feathers at the base in front. They are proud and stylish in carriage and ever active, being peculiarly wide-awake. Of late years they have become exceedingly popular, and we have even been surprised at the great demand for first-class stock and eggs; but we can scarcely wonder, when we consider that they are the most attractive variety of a very beautiful and useful breed of fowls. As old breeders know, most Polish are subject to the vertigo, but we have never had a case of this among our White-Crested Black Polish, they seeming to possess unusual vitality and strength of constitution.

A Pair of Houdans.

Trio of White-Crested Black Polish.

HOUDANS.

Houdans, with their fine, well-formed bodies, covered with a beautiful plumage of black and white intermixed, pinky legs, and their heads almost hidden by the large crest, muffs, and beards, and triple, antler-like comb, and supernumerary toe, cannot fail to attract attention everywhere. They are the best and most hardy of any of the French breeds, and are a fine farmer's fowl. They also bear confinement well and are easily reared. As a table fowl they are well entitled to the cognomen of "The French Dorking." They are excellent layers of fine eggs of unusually large size. The cocks are very vigorous and can serve a large number of hens. The chickens usually hatch some hours before their time, and it is a rare occurrence to

find an unfertile egg. They are non-sitters. Houdans make excellent crosses on common fowls or on the Asiatics.

La Fleche and Crevecœurs are also French breeds of poultry, bred to a small extent in this country, but on account of their delicate constitutions are not valued for farmers' use. All the French breeds, it is believed, originated from a cross of the Polish and the Crevecœurs, and are, in fact, a Polish fowl, to all intents and purposes, but increased in size; the same ancestry is shown by the delicate constitution which characterizes nearly all the varieties.

DORKINGS.

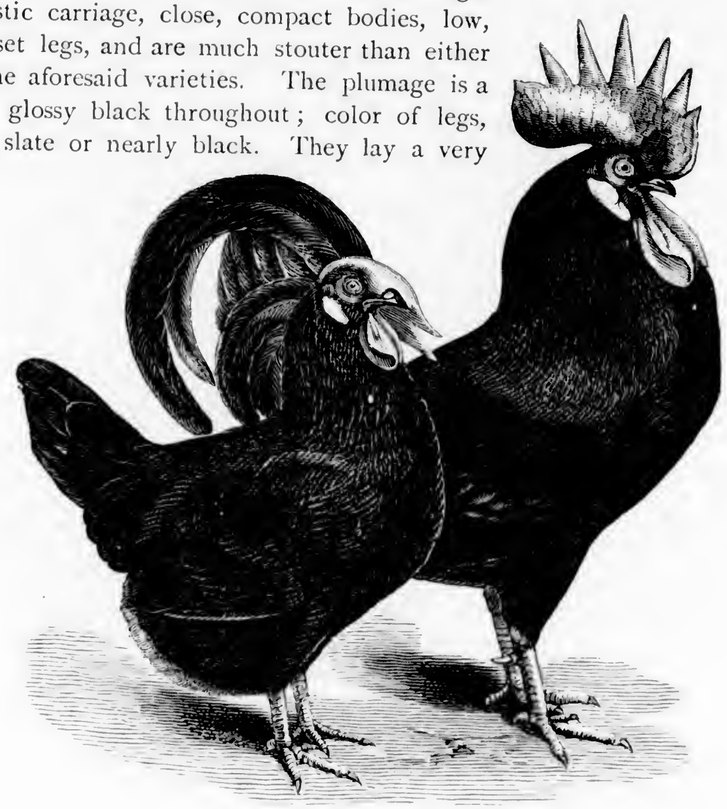
The Dorking is held in high repute in England, and is well deserving of general cultivation by the farmers and fanciers of America. In perfecting this fowl, John Bull—true to his old-time reputation—has admirably catered to the tastes of an epicure. As a table fowl the Dorking is unsurpassed, affording an extra portion of very fine meat, remarkably abundant in the points most esteemed—the breast and wings—and all of the very richest quality. They are a heavy-bodied fowl, well put up, with long, broad back, and close feathered. Altogether, they are one of the very best breeds for the "general purpose" of both table fowls and eggs. The varieties are the Pure White, the Silver Gray, and the Colored Dorkings, the latter not being bred to any special standard of color. The Silver Grays embrace two varieties, the Rose Combed and the Single Combed, the latter being the most generally bred. They are so handsome that they have many admirers. The White Dorkings, as their name indicates, are spotless white in plumage, contrasting nicely on a green sward. The Whites must all possess rose combs, square in front, firm and close-fitting, terminating in a point behind. All pure Dorkings should have a supernumerary fifth toe. We will conclude with the following remarks from the pen of a well-known English breeder:—

"This good, old-fashioned breed is so well-known, and everywhere so appreciated, that we need say but very little about it They have one fault, however, which detracts from their value, viz., that they will not thrive well where ducks are largely kept, whether from the fact that the damp soil which suits ducks is prejudicial to their health, or from other unexplained reasons. We have, ourselves, certainly proved that ducks are 'death' to Dorkings, and are compelled to keep them away from ground which is tainted by waterfowl. They lay a large, white egg, are great favorites for table purposes, owing to their fine, meaty breasts and the whiteness of their flesh."

BLACK MINORCAS.

Although of very recent introduction into America, the Black Minorcas are a very old Spanish breed of fowls, somewhat resembling the Black Leghorn or White-Face Black Spanish, but differing in face, which is coral red,

with white ear lobes, while they are also much larger in size and more prolific layers. They are a very stylish breed, having a majestic carriage, close, compact bodies, low, well-set legs, and are much stouter than either of the aforesaid varieties. The plumage is a rich, glossy black throughout; color of legs, dark slate or nearly black. They lay a very large egg, equal to if not larger than a Cochin or Brahma egg. As to their laying qualities, they are considered far superior to any fowls known. Weight of cocks, 6 to 9 pounds; hens, 4½ to 7 pounds, but some fine specimens run 7 to 8½ pounds each.



A Pair of Black Minorcas.

WHITE MINORCAS.

The difference between the White and Black Minorcas is in color, the White having a red face and white ear lobes, as in the Black, which it also resembles in shape, carriage, size, and symmetry. The plumage is a glossy snow-white, and should be without a single stain. The origin is not definitely known, but is supposed to be a sport from the Black, as most black birds occasionally throw white chicks. They are very hardy, and bear confinement as well as any breed. Of four imported White Minorcas received at our yards March 25th, we gathered 240 eggs to June 25th, confined in a small yard—an average of 22½ a month, and they would have done

much better if at liberty or on a good grass run. The eggs were very large, weighing from 2½ to 3 ounces each.

WHITE MINORCAS.

BANTAMS.

There are several distinct breeds of Bantams, the Games, Silver and Golden Sebrights, and Black African being the most important. All are cultivated almost solely as pets, and hence it is not in our province to speak of them here. Bantams can, however, be bred in so small a yard (five or six feet square) that they can be kept by many who have no better facilities. They also will produce as many eggs, although of small size, as larger fowls. Nothing can exceed their eggs in delicacy of flavor. Small Bantams can be run in the same yard with large Asiatics or Plymouth Rocks without danger of mixing.

HOW TO RAISE GOOD TURKEYS.

No farm stock pays higher or surer return for the capital and time invested than turkeys, yet they are often very poorly managed, and the profits are consequently meagre. We are convinced this neglect is frequently due to want of a proper knowledge of how to breed and manage them, and hence we shall give full and explicit directions on this subject. Turkey hens attain maturity much earlier than the gobblers. At two years old the hens will be full grown; they very seldom become larger after that time; while gobblers are not nearly matured at that age, but continue to grow until four or five years old. They are, however, in their prime breeding condition at three years old. Gobblers of this age mated to hens two years old will produce the finest, largest, and earliest matured young turkeys. The only objection to gobblers of this age is, that on account of their heavy size they will sometimes injure the hens. For this reason the gobblers, although of *large frame*, should not be allowed to lay on fat and become heavy during the breeding season.

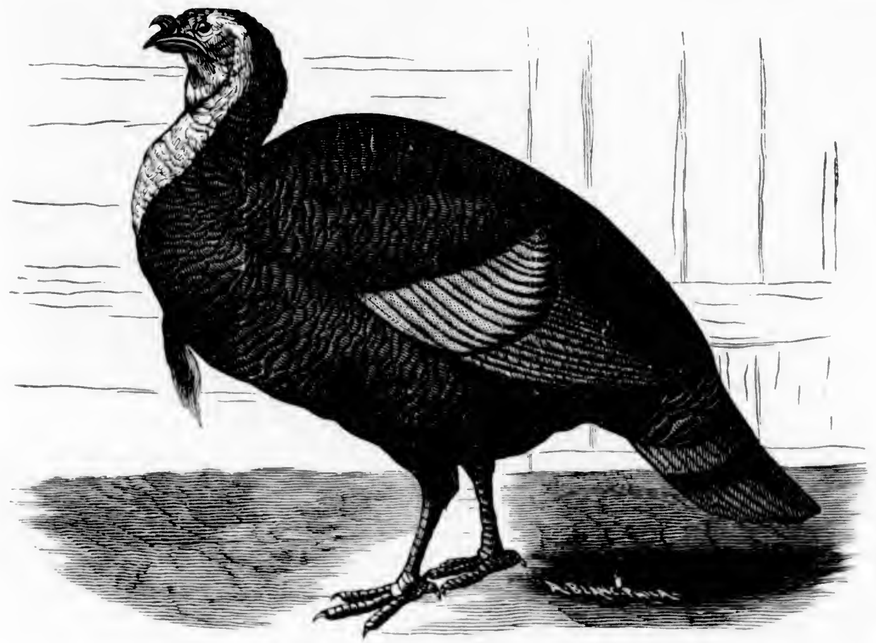
As a necessary preventive of injury to the hens, the spurs and toe nails of the gobbler should be cut off. After the operation, the best and most speedy way to stop the bleeding is to saturate a rag with *Monsell's Liquid Solution of Iron* (which can be procured from any druggist), and tie over the bleeding parts for a day or two. It will immediately stop the blood. A yearling gobbler of large size, mated to two-year-old hens, will also produce fine and large offspring. Great care must always be taken in the selection of the breeding birds. It is very "penny wise and pound foolish" to slaughter the largest young turkeys because they will bring a few more cents in market. Those that grow the fastest and largest, and are of the most perfect form, should be retained for breeders. In a few years the increase in the average size and value of the flock will be so apparent as to convince the farmer that this is beyond all doubt the only right way, and by far the most profitable. We cannot too strongly urge this upon our readers. Turkeys are as sure of being improved or degenerated by the manner in which they are bred and selected as are pigs. It will pay every one who raises turkeys to pay eight or ten dollars for a good, thoroughbred gobbler to breed from. The gobbler should not be akin to the hens. In selecting birds for breeding, care must be taken that they possess no deformities. Crooked breast, which means what meat there is all developed on one side of the breast bone, is often caused by narrow roosting perches. A rail slit in half makes an excellent roost. The roosts should not be too high, if in a house, as the turkeys, not having room to take a long fly in descending, are seriously hurt. The roosts need not be all on the same level, but can slant in the form of gradually ascending steps. The largest and heaviest old gobblers will often prefer the lowest roost. It is useless to attempt to keep turkeys in the same house with hens. While they will generally thrive well roosting out in the trees, etc., yet, for evident reasons, it is always best to have a special house for them. This need only be a shed facing the south and open in front; roof sloping from about nine to seven feet. Turkeys must have liberty and freedom to range at will. They will then pick up much of their food, but should always be fed regularly, every morning and evening. They will then always roost around home, and will be kept constantly in fine growing condition. A friend informs us that by actual experiment he has found that if the soft food (such as meal, etc.) should be mixed with *milk* instead of water, the turkeys when killed will be much more delicate, and the flesh of a far superior quality to those fed on a mixture made with water. Cottage cheese is an excellent mess for them. Turkey hens after three years old are unprofitable as breeders, often laying soft-shelled eggs. The same thing will happen if the turkey hens have not been set during the season. A turkey will lay eighteen or twenty eggs. The eggs of the first laying can be given to hens and the second laying will then be had earlier, when she should be allowed to sit herself, but should be given only so many eggs as she will cover satisfactorily. They begin to lay about April, and unless closely watched will make their nests in the field or among

the shrubbery, where their eggs may be lost. If a hen is discovered in some such place after she has begun to sit, it will be well to afford all the protection possible by placing a cover or inverted box, with one side out, over the nest. The period of incubation is twenty-eight days.

It is an undoubted fact that one impregnation of the gobbler fecundates the entire laying of the turkey hen, and yet it is advisable to keep the gobbler constantly with the hens.

Turkey hens are persistent sitters; they frequently have to be compelled to leave the nest for food and water. The French, who are always such studious economists, avail themselves of this propensity to a very good profit in the hatching of chicks. A turkey hen will sit steadily for three months. By giving a little brandy the hen will sit still longer. One great merit is, that they will during all this while keep in such good condition that they can easily be fattened and killed when their services are no longer needed. Turkeys are very tender when young, until they finish "shooting the red." When the chicks are all hatched the mother turkey should be confined in a small coop placed in an enclosure of about six feet square, surrounded by a board twelve or fifteen inches high. After a while the hen can be allowed her freedom. She will guard her chicks carefully, and will stay in the enclosure with them, or near by. The young turkeys must not be subjected to dampness nor allowed to run in wet grass. When about three weeks old they can be allowed their liberty with the hen on fine days. They must be fed "little and often," and allowed to get no "backsets." At first feed bread thoroughly soaked in milk, and give new milk to drink. Give hard-boiled eggs mashed up and mixed with bread and milk. Feed at least four or five times a day, giving each time just so much as they eat up clean. After a week or two give them curds, and continue until five or six weeks old. At this age feed scalded Indian meal mixed with curd; also, at another time in the day, give scalded Indian, wheat middlings, and bran mixed, the mixture to be three-fourths bran. Turkeys must be liberally fed, and after they are safely through the critical period of their lives will gain in size very rapidly. They should be fed on stimulating food during the moulting season, on account of the great rapidity of shedding and the wonderful change they then undergo. From being stark naked they will be entirely feathered in a few weeks. They are at this time, of course, lighter in weight. A curious fact, and one worthy of notice, is, that the hens will not moult until they are through sitting. Hence, if from any cause they are set very late, the moulting is correspondingly later. We have known a hen to be entirely bare at Christmas. This must by all means be avoided, or the hens will likely not be able to withstand the trying ordeal. It has been observed that turkeys show a great fondness for dandelion leaves, in preference to all other greens. From the well-known medicinal properties of this plant, it will be well to sow a few seeds in some waste spot near the turkey house, so that they can have a constant supply.

Varieties of turkeys are the Mammoth Bronze, Mammoth White, White Holland, Black, Blue, and Buff Turkeys. The BRONZE TURKEYS are generally considered the largest. Adult gobblers will weigh 40 and 45 pounds each, hens 15 to 20. Young turkey gobblers, at eight months old, will weigh from 20 to 25 pounds each, and hens from 12 to 15 pounds. These are fair average weights. They will gain about one pound in two weeks. But occasionally, and also when birds are especially well fed, they will exceed these weights. For breeding stock, however, it is not well to force them too much. Further north, where the snow is on the ground for a longer period, and where, consequently, the turkeys are fed more corn, they will weigh



MAMMOTH BRONZE TURKEY GOBBLER.

heavier. The new American standard only recognizes the light-tipped turkeys, while the Dark Bronze are really the more beautiful, and by many breeders preferred. Both colors can be bred from the same flock if they are so mated, but some of this offspring will be of a mixed bronze plumage. The silver tips, however, are generally purer bred. The Dark Bronze will often throw buff or cinnamon birds, showing that they have been crossed with that variety to secure the desired color. Pure Bronze Turkeys are believed to have originated from a cross of the wild turkey and the gray Narragansetts.

The WHITE HOLLAND TURKEYS are a very handsome and showy variety, the rich red beads and the intense glossy black beard of the male contrast-

ing beautifully with a plumage of snowy whiteness. For a lawn, a finer or more aristocratic ornament could not be desired. They are not only "a thing of beauty," but are also a very valuable breed. They are very much larger than the common White Turkey, and also, unlike them, are very hardy. Their flesh is much esteemed as of a superior delicacy. They are especially valued on account of their superior laying qualities and early mating. While their eggs are not quite as large as the Bronze, they are produced more abundantly.

Black Turkeys are distinguished by an intense deep black color throughout, and are of large size.

Blue Turkeys, sometimes called Slate Turkeys, should be of an even slaty color throughout. The best stock of this breed was imported from France. They are much esteemed on account of their prolificacy, early maturity, large size, and rich flavor of their flesh, being, in many cases, fully equal in size to the Bronze. This breed is well worthy of more general cultivation.

Buff Turkeys are, as their name indicates, of a pure buff color throughout. They are comparatively but little bred. In no stock is the importance of a good male so fully evinced, and every farmer should, each year or two, as already hinted, procure a good thoroughbred gobbler, of either the Bronze, White Holland, or Blue varieties.

New Mammoth White Turkeys.—This distinct new breed, which we introduced in 1890, originated as a sport from the Mammoth Bronze Turkeys, in a similar manner as most white fowls have come as sports from the darker varieties. The breeder has spent a number of years in perfecting them, and now they throw only an occasional dark poult. They have the general characteristics of the Bronze variety, except that they are even handsomer, mature earlier, and are rather more domestic in their habits. The plumage is pure white throughout, the heads and wattles bright red, and shanks pinkish or flesh color. They almost equal in size the Mammoth Bronze Turkeys. They are not, as some might suppose, selected from the white Hollands, but are a distinct breed in every particular, and are certainly a great acquisition as the first and only breed of pure white turkeys that is both hardy and of large size. They are very ornamental, and will doubtless become very popular throughout the United States as soon as there is a sufficient stock to supply the demand.

RAISING GEESE.

No land or water fowl can be so easily or cheaply raised as Geese. They will thrive well on pasture alone. It is of the first importance to breed from large, matured specimens, and when once mated, the same birds can be retained as breeders for many years. The gander, however, is apt to get cross with age, and hence has to be changed. Two or three geese, or sometimes four, can be mated to one gander. The goose will lay 13 to 15 eggs. When ready for setting, she should only have 13 eggs. She is a splendid

sitter, and should not be disturbed. When leaving the nest, to feed, she covers her eggs, like the duck, although not so well. The period of incubation is thirty days. They usually commence laying in February. Large, common hens, Cochins or Brahmas, can be used as sitters, giving each hen three or four eggs. Turkeys will also hatch the eggs well. On account of the thick shells of the eggs and the long period of incubation, it is recommended to make the nest on the ground or moist earth, and during the last ten days or two weeks to sprinkle the eggs with tepid water. The gander will frequently assist his favorite mate in the labors of incubation, and after the goslings are hatched is very vigilant in his care of them. At first, the goslings should be kept warm, and fed "little and often," with hard-boiled eggs, bread crumbs, or scalded meal, not neglecting a plentiful supply of greens and grass. They are soon ready to turn out to graze, and will pick all their food, mostly grass, in the fields. They require no other food so long as this lasts, and they can be marketed in fine condition, called in England "green geese." After the supply of grass is cut off by winter, the geese can be put up to fatten, if so desired. This should be done in a dark place, and they should be well fed, on oats, meal, or barley meal, or a mixture. A bunch of sweet hay should be tied up within their reach.

Geese can be raised profitably with very little water, only plenty to drink and a large tub full for bathing. One valuable peculiarity of geese is that they always give notice of hen-roost robbers, whether biped or quadruped, by their shrill cries, and hence are excellent "watch-dogs."

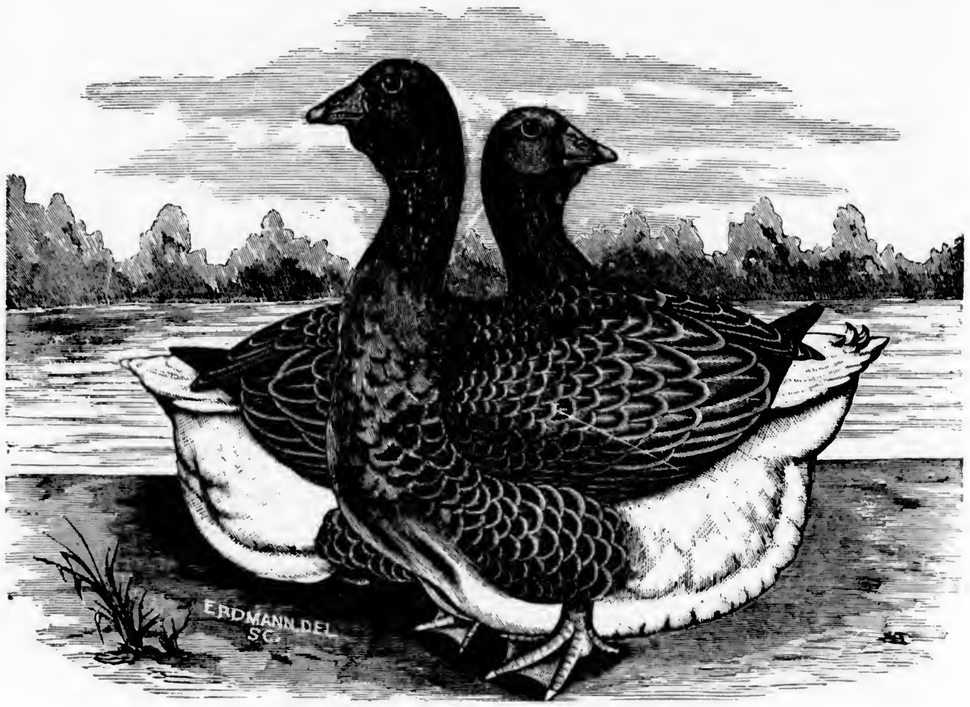
The Varieties of Thoroughbred Geese are the Toulouse, Embden, and China. The value of thoroughbreds is here fully illustrated; for while the first cross pure Embden geese with a Toulouse gander make the very finest and largest goslings for the market, yet these, if bred together, will rapidly deteriorate.

The Toulouse Geese are of an even shade of gray, with white on the belly. In size, the Toulouse generally are the largest, although sometimes equaled by the Embden. The prize Toulouse geese at the Birmingham show weighed as high as sixty pounds per pair, and goslings forty-eight and a half pounds. This is counted the heaviest weight ever attained. They mature early, are very hardy, and produce an abundance of feathers.

Embden or Bremen Geese are of a pure white plumage, with dark flesh-colored bills, orange legs, and bright blue eyes. They should be very tall and of erect carriage, with large, square bodies. Mr. J. K. Fowler gives the following weights of his prize geese:—the gander (three years old) weighed just thirty-two and a half pounds, and his mate (a goose of the same age) pulled down very nearly twenty-six pounds; the goslings weighed twenty-seven and a half pounds and twenty-four pounds. They are kept and bred largely in Saxony, and are celebrated for the delicacy of their meat. They are good layers and easily raised. The feathers (a very important "crop"

if geese are bred in quantities) are more valuable than those of the Toulouse or any other gray geese.

The CHINA or HONG KONG GEESE are not so large, but are usually prolific layers. The goose will lay as many as thirty eggs before offering to sit, and will lay three or even four litters in a season. Their flesh is very superior; they mature early, are easily raised, and are readily fattened. Their eggs are



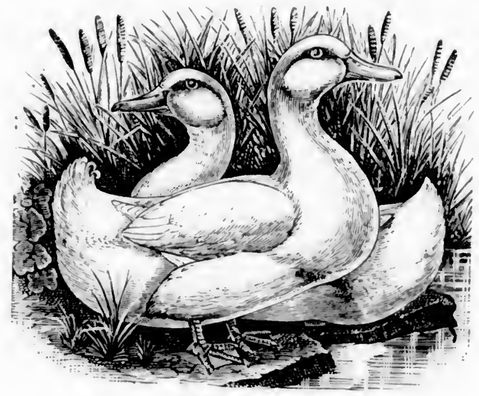
TOULOUSE GEESE.

Winners of Several First Prizes—Accurately Engraved from Life.

not as large by about one-third as the two preceding breeds, but the greatly increased quantity more than compensates. They are, besides, very ornamental, having a large protuberance at the base of the bill, and they should receive more attention from poultry breeders. In color, they are both brown (like the Toulouse) and pure snowy white. In concluding our remarks on geese, we would strongly urge breeders and farmers everywhere to pay more attention to the breeding of this valued domestic fowl.

RAISING DUCKS.

Farmers generally neglect the breeding of ducks, from an idea that they "eat their heads off." There is no farm poultry, if well managed, more profitable. It has been proved by actual trial that ducks often lay more eggs than hens. Their eggs, besides being much larger and more valuable, also contain less waste. Ducks, if marketed at the right season, always bring good prices. They can be raised very easily. The eggs can be set under hens, and as many as forty or fifty young ducklings can be mothered by one hen. They require much the same food as fowls, and if intended for the market should be liberally fed. In Aylesbury, England, where thousand of ducks are marketed every week, it is estimated that the cost of producing a couple of ducklings of nearly four pounds' weight at eight weeks old is two shillings each. They fetch in the London market, during March, seventeen to nineteen shillings a couple. One great point in their favor is



PEKIN DUCKS.

that they are remarkably exempt from the ravages of fatal diseases that so often depopulate a barnyard of fowls. Ducks will almost earn their living by the vast quantities of grubs and insects they destroy. Two or three ducks can be given to one drake.

The PEKIN DUCK, although only introduced from China in 1873, has already acquired great fame. They are by far the largest ducks in appearance, but, like all Asiatic fowls, are not so large as they look, having a loose, fluffy plumage. Although sometimes equaled in weight by the Rouens, yet, as a rule, we believe they are the heaviest. They mature very early, and are excellent layers. In 1875 one duck produced 108 eggs, which were sold for sitting, and after we were done shipping the eggs she was not done supplying them. That was a profitable duck, producing 108 eggs at $4.00 per dozen. Pekins can be raised successfully with only sufficient water for drinking; they can be confined by a very low fence, and are very domestic. There

is one drawback to them, with which we have had some trouble. We have found that some males fail to impregnate the eggs. This, we have reason to think, is owing to their broad, clumsy bodies. They are clad in a beautiful coat of creamy whiteness, with yellow bills and orange legs. A single duck has been known to lay 200 eggs in one season. For breeding for sale, as a fancy fowl, Pekin Ducks are undoubtedly in great demand, and at the most satisfactory prices. For the first year or two the ducks sold for $20 per pair, and eggs $10 per dozen, and were eagerly sought at these figures. But now, from the increase of the stock, they can be had at much less prices.

AYLESBURY DUCKS are snowy white in plumage, with flesh-colored bills and orange legs. They are long and graceful in shape of body, and comely in appearance. They are especially celebrated as prolific layers; they will commence in March and continue till June or July. They mature early, and are very hardy and easily raised. Extra specimens have attained the extreme weights of 18 and 19 pounds per pair; but 12 to 14 pounds are good weights. These are the ducks that are so celebrated in England, and raised in such immense quantities in the district from which they derive their name. An Aylesbury drake will make a very marked improvement if crossed on the common stock.

ROUEN DUCKS are without a rival in beauty and elegance of plumage. They resemble the wild mallards. Choice strains are very large. There are many degenerated specimens of this variety in the country that are of small size. They mature early and are excellent table fowls. While not as prolific as the Aylesbury, we have known them to lay very well, laying in the fall as well as the spring. Their eggs are not as large as the Aylesbury.

CAYUGA DUCKS are of American origin, and are of one solid metallic black plumage throughout. They are of large size, good layers, and easily raised.

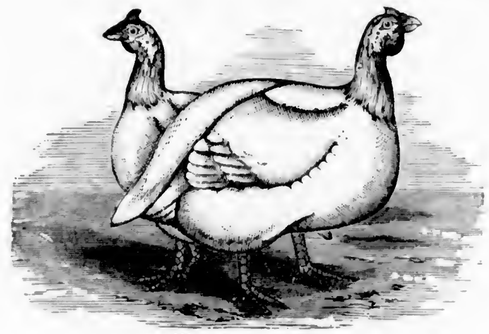
MUSCOVY DUCKS are very old. They are distinctly a "dry land" duck, and never quack. The drakes are the largest of all, but the ducks are rather small. They are five weeks hatching. They are both pure white and white and black splashed. Drakes will weigh ten and twelve pounds each. The mules between this breed and the water ducks make a very good table fowl, celebrated for early maturity.

CRESTED WHITE DUCKS are very attractive. They are pure white, with large topknots. They are of good size, mature early, and lay well.

CALL DUCKS are small and chiefly esteemed as ornamental water fowls. They are both brown and white in plumage, the former resembling the wild mallards.

GUINEA FOWLS.

Guineas lay a large number of eggs, which are of a very rich flavor. Their flesh is very choice and game-like. They have, however, their drawbacks, which are their inherent nature of cruelty to other poultry, and also their great propensity to wander away from home. Both these objections to them can, however, to a great degree, be overcome; the former by kind and goodly treatment of them; the latter, by furnishing secluded nests, and also not disturbing them. If a guinea hen's nest is robbed of a number of eggs at once, she will forsake it and seek a more secluded one. Hence the eggs should be gathered every day, one egg being left in the nest. The hen lays from sixty to one hundred eggs per annum, the eggs being rather small, very pointed at the end, and of a dark cream-color. The eggs are of excellent flavor, and there is considerable demand for them in the markets, where we have often seen them exposed for sale. The young chicks have very



WHITE GUINEAS.

small crops, and hence must have them filled very frequently, with the same food as recommended for chicks. In a natural state guineas mate in pairs, but under domestication one male will readily serve a couple of hens. The Guinea hen seldom sits herself until August, when chicks are always somewhat difficult to rear. Hence, it is advisable to set the earlier eggs under hens, which not only avoids this difficulty, but brings them up tamer. The period of incubation is generally twenty-six days, not twenty-eight, as is often stated. It is very difficult to distinguish the sexes. This can be done by watching their actions, by the hen's peculiar cry, and also from the fact that the cock is more cruel to other fowls. Guineas will generally roost in the trees around their home, and are the best of "watch dogs," giving ample notice of the approach of any person in the neighborhood. The ordinary Pearl Guinea Fowl (so called from the resemblance of the spots to pearls) are very uniformly marked with white spots in a ground color of gray purple. Most of the common guineas have patches of white, or white feathers in the wings, and are not nearly so pretty. Pure white guineas are rather rare, and are very attractive ornaments on a green lawn.

PLANS FOR POULTRY HOUSES.

For this chapter, which, with that on "The Farm and Garden Incubator," will add much to the value of this little treatise, we would express our indebtedness to the publishers of *The Farm and Garden*, Philadelphia, by whose permission they are published, and who have kindly supplied us with the illustrations. We also give a description of our Poultry Yards at Fordhook Farm, for which we are often asked.

THE POULTRY HOUSE.

The main point to be observed, when constructing a poultry house, is to secure as much space on the *floor* as possible, and to avoid too broad a roof. The object is to save expense, as the roof is the most costly part of a house, while the real value depends upon the area on the floor in proportion to total cost. Hundreds of designs of poultry houses have been illustrated and published, but, unfortunately, each individual has certain preferences which prevent perfect unanimity in constructing them on the most favorable plans. It is as easy to have all agree upon one common plan of a dwelling house for humans as for fowls. The climate, soil, breed, and space are all to be considered when making the design.

No matter what kind of a poultry house may be prepared, the fact must not be overlooked that during a great portion of the winter, when the snow is on the ground, the fowls must be kept confined in the house. The greater the space, especially on the floor, therefore, the better they will be enabled to exercise and keep in proper condition, and as *yards* are often of no consequence during a severe season, success may attend upon the investment of a few dollars more than the amount originally intended, and it often happens that loss occurs simply for want of room on the floor. If the area on the floor is limited to a small proportion for each hen, and the house cannot be conveniently enlarged, then the stock must be reduced, in order to give those remaining more room.

It will not do to feed the hens and then have them sit idly about doing nothing. They then become addicted to feather-pulling and other vices, while the food tends to fatten them by reason of their inactivity. The house should have plenty of sunlight, so as to become warm and also light. The light is the most important thing of all. Fowls have the greatest aversion to gloomy surroundings. They will be perfectly satisfied with well-lighted, comfortable apartments, but prefer the bleak outside to a house that is but dimly lighted. During the day the house should be kept open as much as possible, provided the birds are not exposed to draughts or chilling blasts, so as to purify and ventilate it, but during the night, in cold weather, the house should be warm and close, as plenty of cold air will get in without the use of ventilators.

The object should be to have the number in the flock only large enough

to utilize the space on the floor to advantage. If too crowded they will not lay, as is well known by many who are aware that sometimes their neighbors get more eggs from a small flock than they do from large flocks, and the secret is that they have plenty of room for exercise. The floor should be large enough to permit of places for scratching, dusting, roosting, and laying. Just how much space may be required depends upon the size of the flock. We think a house 10 × 10 feet none too large for ten fowls, or ten square feet for each hen.

THE CHEAPEST POULTRY HOUSE THAT CAN BE BUILT.

We give a design of the poultry house of Mr. J. L. Harris, of New Jersey, which, though not as convenient and as well arranged as some houses, can be built at the least cost in proportion to the greatest available space. The *roof* is always the most expensive part of a house. The studding and rafters are also expensive items. We propose to get rid of much of both the roof and the studding, which will be noticed by reference to Fig. 2. Before beginning

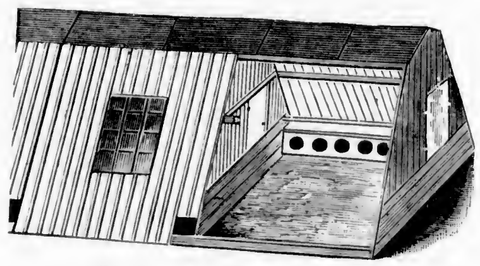


FIG. 1.—CHEAP POULTRY HOUSE.

the description, we will state that although we give the size shown here, yet the house may be of any length desired, while boards 8, 10, 12, 14, or 16 feet may be used, according to preference, but we will use, for convenience, boards 10 feet long and one inch thick, which are nailed straight up and down, the joints covered with strips two inches wide. We would suggest that before putting on the strips the boards be covered with building paper (price one-half cent per square foot) and painted with linseed oil; or cheap tarred paper may be used, as the strips will hold the paper on firmly, and the house will then be water-tight and frost-proof.

No posts are required, as the boards are nailed to six stringers (2 × 3 or 3 × 4) running lengthwise the building, the ends of which are shown at *A A A A A A*, Fig. 2. The roof is made by fastening boards to cross-pieces, and tarred paper placed over the boards. The cross-pieces are simply boards four feet long and one inch thick and nine inches wide, slightly rounded. The partitions are made by nailing two boards (each one foot wide) at the bottom, with lath running straight up and down. The bottom boards and top cross-

pieces tie the building together. A few strips, running crosswise, may be needed for fastening the lath partitions.

For a building 12 feet on the floor, 4 feet on the roof, and 10 feet on the sides, the cost will be about as follows: Boards, 2000 feet for sides (less space taken up by the windows), at $20 per thousand, $40; roof, 400 feet, $8; ends, 200 feet, $4; partitions, bottom boards, 250 feet, $5; doors, etc., 200 feet, $4; studding (lengthwise), 600 feet, at $20 per thousand, $12; for partitions, etc., 400 feet, $8; total for lumber, $81. Tarred paper for roof will be, for paper, paint, etc., $12, while paper for sides, and also strips, will be about $15, while hardware and incidentals will add about $10 more, making a total of $128 for a house 100 feet long and 12 feet wide, for *material*. The estimate is a rough one, and may not be correct, but it will convey some idea of the cost. The labor will be extra, but the house is

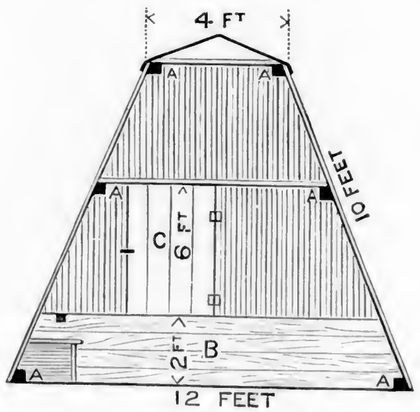


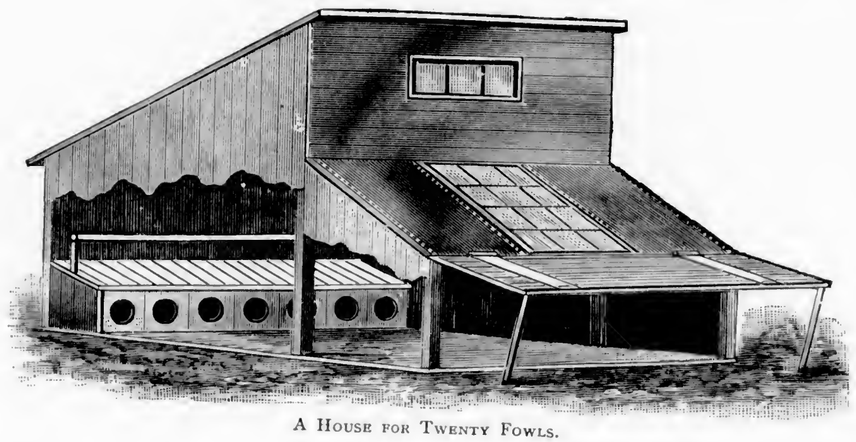
FIG. 2. CHEAP POULTRY HOUSE.

very simple in construction, and can be easily built. Windows will be extra, of course.

The advantages of this house are: 1. Its cheap cost. 2. Its form braces it firmly. 3. No posts or uprights are required, except for doors. 4. The roof may be nearly flat, and of cheap material. 5. It gives the greatest available space on the floor for the least money. 6. On opening the doors, the two foot boards prevent birds from passing by you, nor can they see each other from adjoining apartments when on the floor. 7. It is a covered shed in bad weather, as a flock of a dozen hens may have a space 10 × 12 feet. 8. It can be built of 16-feet boards, if preferred, and the upper part used as a pigeon loft. 9. A carpenter is not required to build it, as the plan is simple. 10. It may have a board floor, if preferred. 11. The sides cheapen the cost of the roof. 12. The windows may be of any width or size.

HOUSE FOR TWENTY FOWLS.

Illustration below shows a house 10 feet wide and 10 feet long, with projection in front. The back wall is 6 feet high, and the front 8 feet. The roost is over a raised platform, which catches the droppings, with the nests under the platform. The object is to give plenty of room on the ground. Though the roof will be only 12 feet wide, yet it will be noticed that the projection, which has a window in the center, allows 4 feet more, making the floor 10 × 14 feet, or 140 square feet. A small window is higher up, to give more light, while the door is at the end, next to the projection. For 20 birds there should be two roosts over the platform. The platform should be two feet wide (if one roost), or three feet wide if two roosts. Observe that in front is a hinged door, which may be raised up during the day, or let down at night, which not only allows plenty of ventilation dur-



A HOUSE FOR TWENTY FOWLS.

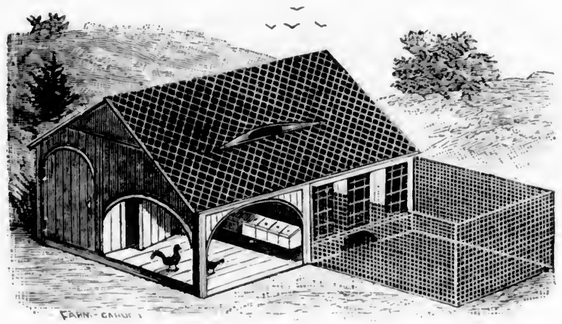
ing the day, but also more covered space when raised up, as well as serving for a shady resort in summer. The roof may be of tarred paper, while the inside may be lined with sheathing paper.

Better still than the tarred paper is the patent protecting cloth, made by the U. S. Waterproofing Fibre Co., 56 South St., New York. Though intended to take the place of glass for greenhouse purposes, it should also be widely used by poultrymen. We recommend it also for a covering for coops of young chicks.

POULTRY HOUSE AND OPEN SHED.

The poultry house given in the illustration is 11 feet wide, 16 feet 6 inches long, 5 feet high from ground to front plate, 6 feet to rear plate, 9 feet to center, making rear roof-board 5 feet 6 inches long, front roof-board 8 feet long, projecting 6 inches, in each case, over plate, ends projecting same, sills 3 × 4, uprights and cross pieces 2 × 3, entrance passage 4 × 8. In pass-

age there are four feed boxes 1 foot deep and 15 inches wide, 2 feet 6 inches high from ground, with covers, which will hold quite a quantity of grain of different kinds. In center a door opens into the room marked 6 × 8, which in elevation is the open corner. In the same room are the nest boxes, six in number, with covers, 1 foot wide and 15 inches deep, and the same height from ground as feed boxes. Division walls are 4 feet high, of tight boards, and the rest, to roof, of wire netting. Main room for fowls is 8 × 10; drop board, as indicated by black line on curve, 2 feet from ground and 21 inches wide, roost pole in center, three windows 2 feet wide by 3 feet 3 inches high, 6 inches apart, hinged to open in summer; inside netting, 15 inches from ground under center window, exit; under nest boxes exit for corner room. In roof, ventilation window 12 inches wide by 18 inches long, on center pivot, opened by cord. Roof shingled, sides battened. Cost, complete, $50.00; material, $35.00; labor, $15.00.



Poultry House and Open Shed.

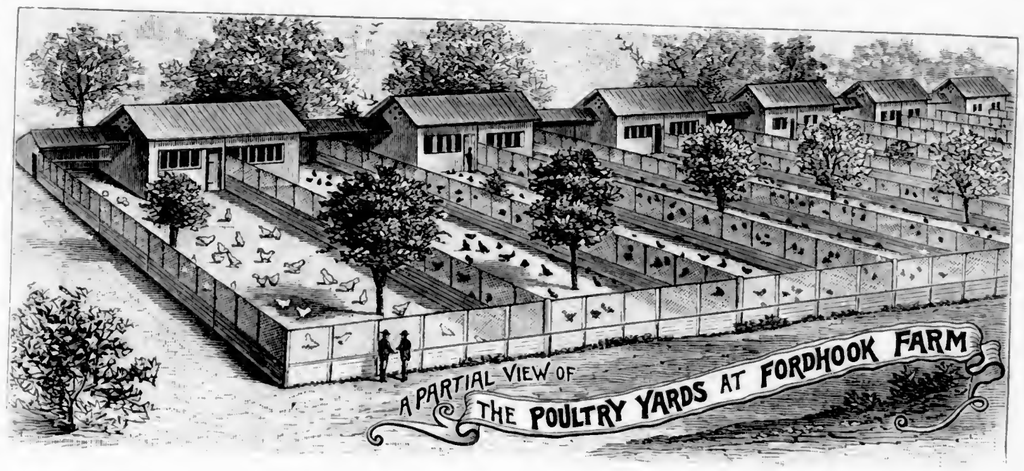
The house was designed for 20 hens the year round, to stay in space 8 × 10 feet, and yard as much as can be given, the more the better. In the elevation, the open corner is intended to have wire netting in summer and early spring, and sash in winter. The room is designed for a hatching-room, and as a warm, dry place for young chickens on the ground, and in wet and very hot days in summer for fowls from the main room to congregate, and in the winter months a fine place to keep the hens busy scratching, and gives so much more room.

The nest-boxes are raised from the ground high enough to admit of extra boxes for setting hens. They can come off and go back at liberty. The covers to nest-boxes are slanted so the fowls cannot roost on them, and you are not obliged to go into the main house for eggs.

The grain bins are compact and out of the way. The narrow line in front of boxes is a board 6 inches wide by 7 feet long, intended for the hens to fly up on to enter nests, and it also serves as a cover for soft-feed trough underneath. The drinking fountain hangs on an upright, represented on drop board as dots, which is under same and out of the way.

The price named is what it would cost in this locality, but by battening the roof it would cost some less, and West, perhaps very much less. It, of course, depends some on locality and way of getting at it.

As will be seen from a glance at illustration below, the houses, instead of forming one long range, are all separate. Each is divided into two compartments by a passageway through the center; from this all the eggs can be collected and the droppings cleared away without entering the roosting places. Each compartment leads into an inclosed run of its own. The runs are planted with fruit-bearing trees, and are inclosed by wire netting and boarded up from the bottom about two feet. This effectually prevents all fighting through the wires. The houses are built of wood, and measure 24 × 10 feet. The yards measure 90 × 25 feet, so there is ample room for a good pen of birds in each, while the grass can at the same time



be kept in fairly good condition. Of course, this varies greatly according to the breed, as some breeds, such as the Asiatics, are much harder on the grass than others. A house having lately been built at the extreme right serves as the incubator and brooder-house, as well as the food-store and kitchen, etc. It consists of one floor and basement. Down below are the incubators in full working order, and up above are the brooders with inclosed inside runs, which are used until the chickens are old enough to be put out, and also in bad weather. All the floors are of concrete and rat-proof, as are all the houses. They are made so by a very simple contrivance: rat-proof netting is sunk three feet into the ground round the outside of all the houses and runs, and bent over flat for about one foot in the ground at the bottom. This latter precaution effectually prevents the rats from burrowing under the netting. The Pineland and Monarch incubators alone are used. Outside the house is

another inclosed run which is chicken-proof, where the young chicks are confined till they are strong enough to be turned into the large chicken nursery beyond, and again there is another yard for still older chickens.

THE FARM AND GARDEN INCUBATOR.

In presenting this incubator we will state that it differs but little from one given in a previous issue, but we will attempt to make it plainer than before.

First, get good boards, 1 inch thick and 1 foot wide. Cut them 46 inches long for your floor, and have the floor 42 inches wide. Place four posts, which are 24 inches high, at each corner (Fig. 1), marked *A A A A*, and two posts (*B B*) in front, the two front posts to be 18 inches high. Make posts of 2 × 3 strips and nail them securely to the floor. Fasten the floor boards together by strips underneath, using as many as preferred. The four corner posts are for your

OUTER BOX.

This box, when finished, is 4 feet long and 44 inches wide, outside, provided it is made of boards one inch thick. Including its tops and floor, it

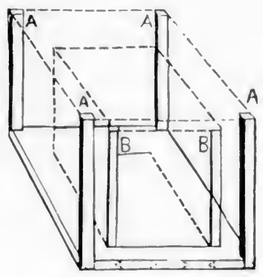


FIG. 1. INNER BOX.

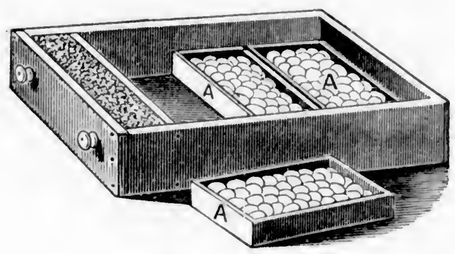


FIG. 2. EGG DRAWER.

is 26 inches high. Nail on your side boards. Let rear and front end boards cover ends of side boards. After the tank is in, and the top of the *inner box* is on, cover inner box with sawdust, and nail down the top of the outer box. Tongued and grooved boards should be used for every part of the incubator except the floor, which should be of heavy boards. All the measurements given here, however, are for boards one inch thick, but three-quarter stuff may be used if desired.

INNER BOX.

This holds, or rather comprises, ventilator, egg drawer, and tank. It is 40 inches long and 32 inches wide, outside measurement, and must hold a tank 30 × 36. The side boards are nailed to the posts *B B* (Fig. 1) and front boards of outer box, and fastened at the rear end by the rear boards being nailed to the ends of the side boards. Cleats are put on ends and

sides (on the floor), to fasten the inner box on the floor. Nail the bottoms of the side and rear end boards to the cleats.

To make the inner box, refer to Fig. 5, which has portions of the outer and inner boxes torn away, to show interior. *A* is the larger or outer box; *B* is the inner box; *C C* are strips 1 inch wide and 1 inch thick, nailed to sides of inner box; *D D* are strips 1 inch wide and 1 inch thick nailed to sides of inner box. The strips *C C*, with iron rods, half-inch thick (*F F F F*), hold and support the tank. Let ends of iron rods extend a little into sides of inner box, to assist in supporting the weight of water. The strips *D D* are to hold the egg drawer. *E* is a tin tube, 1¼ inches in diameter and 2 feet long, placed in the front part of the ventilator, to admit air. Observe, however, that Fig. 5 does not show the sawdust in front, as will be explained. We will now take up the separate parts. First is the

VENTILATOR.

This is simply the bottom of the inner box, being under the egg drawer, 5 inches deep and 30 inches wide (the side boards of the inner box being

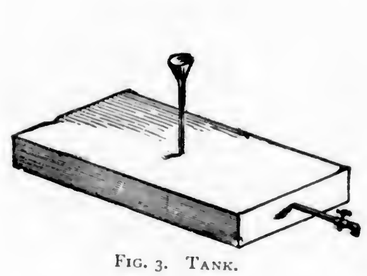


FIG. 3. TANK.

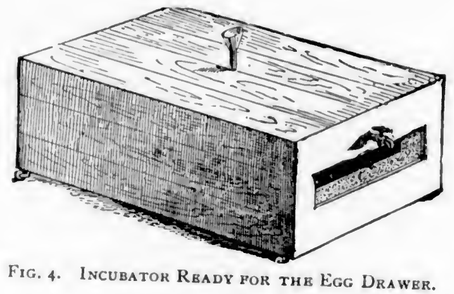


FIG. 4. INCUBATOR READY FOR THE EGG DRAWER.

its sides). The front end is boxed off, which includes the front boards and also the sawdust, thus making ventilator, *inside* measurement, 36 inches long. *E* is the tin tube, for the admission of air, before mentioned. Use no sawdust in the ventilator, but paper the bottom well and close, so as to have no air enter except through the tin tube. The tin tube is open at the front on outside of incubator, and enters into ventilator.

EGG DRAWER.

The egg drawer goes *under* the tank, and rests on the strips *D D* (Fig. 5). The egg drawer is 4 inches deep, outside measurement. It is 39 inches long, outside measurement (which includes the boxed-off portion in front of drawer), and is 30 inches wide. Three movable trays, each 1½ inches deep, are fitted in egg drawer. Nail strips one inch wide and five-eighths of an inch thick, one inch apart, the length of the egg drawer (but not under boxed-off portion), for the bottom. Mortise ends of strips in egg drawer, so as to have the bottom smooth. Tack a piece of muslin on these strips

(thin muslin is best), and tack it on the *inside* of the drawer. Now nail strips to bottom of trays (use lath, if desired, cut to one inch width), but you need not mortise them. Simply nail them on the bottom, one inch apart, running lengthwise, and tack muslin on the bottom of the trays *inside,* in the same way as for egg drawer. The inside of your drawer will be 3 inches deep. The sawdust in front of egg drawer (the boxed portion) fits in boxed front of incubator (see Fig. 4). Put a broad cap on outside of egg drawer, at front end, to exclude air.

THE TANK.

This is 30×36 inches, and is 7 inches deep. It is supported by the strips *C C*, and rods *F F F F* (Fig. 5). Being 36 inches long, it goes

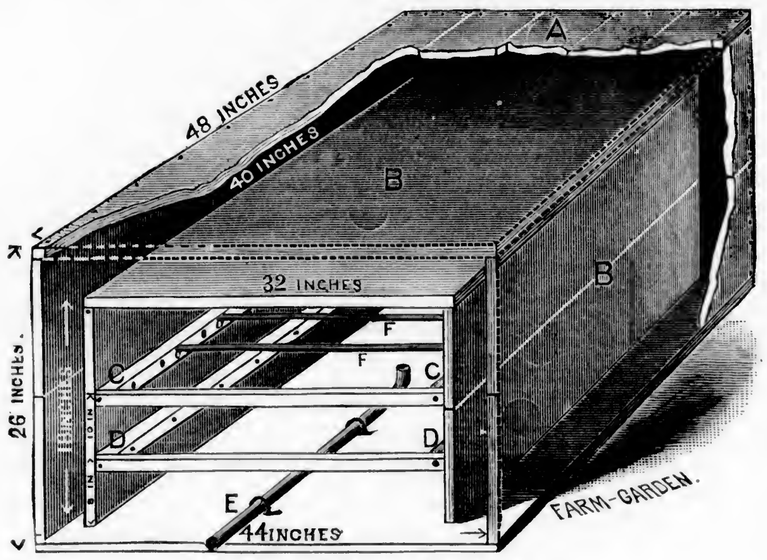


FIG. 5. INTERIOR OF INCUBATOR.

close up to the *back* boards of the inner box, the front being enclosed by a sliding board, secured with upright strips at each end of board, one inch in diameter (so as to remove tank when necessary), which leaves a small space in *front* of the sliding board to be filled with sawdust. Have the tank tube in front only long enough to extend through the sawdust in front, and have your faucet to screw into this tube, the tube being threaded. The tube on top of tank should be long enough to extend through the tops of *both* boxes (outer and inner, through the sawdust), and should, therefore, be 7 inches high from top of tank, as is seen at Fig. 4. When the incubator is ready, we have Fig. 4, which shows the sawdust packing in front, by looking into the opening into which the egg drawer enters when filled with eggs. Fig. 6 shows the incubator as if cut in half lengthwise, and displays all the positions. What is meant by the "boxed-off" portion in front, is that portion filled with sawdust in front. The side boards of the inner box are joined, on their front ends, to the front boards of the outer box, being also nailed to the two short middle posts. Fill in between the boxes with sawdust, and if sawdust is scarce, use chaff, oats, finely-cut hay (rammed down), or anything that will answer, but sawdust or chaff is best. In Fig. 6 *A* is the tube on top, *B* the faucet in front, *C* the opening for the egg drawer, and *D* the tube to admit air into the ventilator. This tin tube should be as close to the bottom of the ventilator as possible. When making incubator, do not forget to cut holes for tubes of tank and also for air tubes to come through, and then putty around them.

DIRECTIONS FOR OPERATING.

Each tray holds about 80 eggs, laid in promiscuously, the same as in a nest, making total number for incubator 240 eggs. First fill the tank with

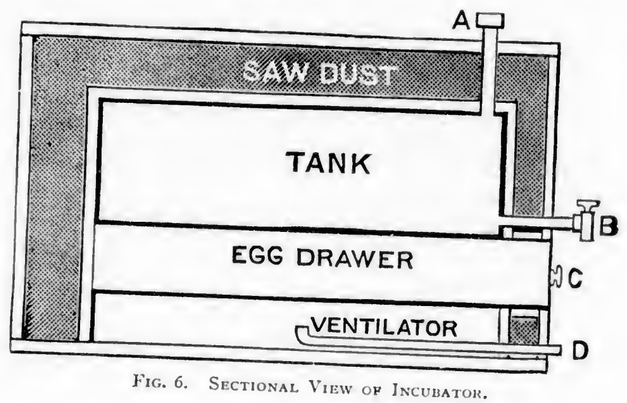


FIG. 6. SECTIONAL VIEW OF INCUBATOR.

boiling water, but never allow it to remain in the tube on top, as it thus increases pressure; hence, when tank is full to top of the tube, draw off a gallon of water. Fill it 48 hours before putting eggs in, and have heat up to 115° before they are put in. As the eggs will cool down the heat, do not open the drawer for six hours, when the heat should be 103°, and kept as near to that degree as possible, until the end of the hatch. It is best to run it a few days without eggs, to learn it thoroughly. Place incubator in a place where the temperature does not fall below 60°. As the heat will come up slowly, it will also cool off slowly. Should the heat be difficult to bring up, or the eggs be too cool, you can raise or lower the trays, using small strips under them. You can also stop up or open the air tube in the front opening of the ventilator whenever you desire. When the eggs are put in, the drawer will cool down some. All that is required then is to add about a bucket or so of water once or twice a day, in the morning and at night, but be careful about endeavoring to get up heat suddenly, as the

heat does not rise for five hours after the additional bucket of water is added. The cool air comes from the ventilator pipe, passing through the muslin bottom of the egg drawer. Do not oblige visitors by opening the machine near the critical time that the chicks are due to hatch, as it causes considerable loss of heat and moisture, both of which are very essential at this period. *Cold draughts* on the chicks at that time are fatal. *Be sure your thermometer records correctly*, as half the failures are due to incorrect thermometers, and not one in twenty is correct. Place the bulb of the thermometer even with the top of the eggs—that is, when the thermometer is lying down in the drawer—with the upper end slightly raised, so as to allow the mercury to rise, but the bulb and eggs should be of the same heat, as the figures record the heat in the *bulb*, and not in the tube.

Turn the eggs twice a day at regular intervals—six o'clock in the morning and six o'clock at night. Do not let them cool lower than 70°. Turn them by taking a row of eggs from the end of the tray and placing them at the other end, turning the eggs by rolling them over with your hand. By

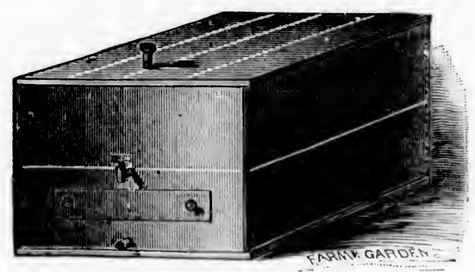


FIG. 7. INCUBATOR COMPLETE.

removing only one row you can roll all the rest easily. Give no moisture the first week, very little the second, and plenty the third week. Do not sprinkle the eggs. For moisture, put a wet sponge, the size of an egg (placed in a flat cup), in each tray the second week, and two sponges in each tray the third week. Do not put in sponges until you are about to shut up the drawer, after turning. Wet the sponges by dipping in *hot* water. After the first ten days the animal heat of the chicks will partially assist in keeping the temperature. Be careful, as heat always drops when chicks are taken out. You can have a small glass door in front of egg drawer, to observe thermometer, if desired. Always change position of trays when eggs are turned, putting the front one at the rear.

HOW TO RAISE DUCKS WITHOUT WATER, HOW TO MAKE THEM ATTAIN GREAT WEIGHTS, AND WHERE THE PROFIT LIES.

It was once supposed that ducks could not be raised without ponds of water, but they are now kept in brooders 5 × 7 feet, with yards 5 × 16 feet (100 in each yard), until they are eight or ten weeks old, when they are

ready for market. Ducks are profitable if sold as soon as they reach four pounds weight, or five at the highest, as they will return rapid growth and increase for all the food they may consume up to that age. After that time they do not pay, except to keep a few, unless they have a pond and grass run. June is the best month for selling, and July next, as young ducks bring from 25 to 30 cents per pound, according to quality, in the New York markets. A pair of Pekin, Rouen, or Aylesbury ducks ought to weigh, with heavy feeding, ten pounds per pair the day they are ten weeks old.

If raised under hens, keep the hen and young ducks in little coops and runs, away from water. In fact, until the ducks are feathered, they should be given drinking water in a manner only to allow of their getting their beaks wet; for, contrary to the old saying that "wet weather is splendid for young ducks," nothing is so fatal to them as dampness. Very cold drinking water will cause them to have cramps, hence it should be tepid.

Feed them, after they are 24 hours old, on a mixture of mashed potatoes, which may be thickened with ground grain (composed of equal parts of corn meal, ground oats, and middlings), and give them all the milk they can drink. Scald all the food the first two weeks. After they are three days old, give them meat, chopped fine (or ground meat), mixed in their food three times a week. Chopped grass, cabbage, vegetable tops, clover hay chopped and steeped in water, or any kind of green food may be given liberally. After the second week cooked turnips and ground grain will answer, with a little ground meat. Feed four times a day until they go to market.

They are subject to but few diseases. Cramps occur from cold water. Leg weakness comes from damp quarters at night. Apoplexy attacks grown ducks when they are very fat, and they are also subject to vertigo. If attacked by the large, gray body lice on the heads, they will appear apparently well, and suddenly turn over on their backs and die. The floor upon which they sleep must be of boards, and should be kept very clean and dry. As we stated, dampness is fatal to young ducks.

If raised in incubators feed them in little troughs, to avoid fouling the food. They require plenty of heat in the brooder at first, but after they are four weeks old can do well without it. Give them plenty of drinking water always, and let it be clean.

Young ducks are usually marketed dressed, leaving on heads and legs, but some markets require the entrails to be drawn, while others do not. Old ducks seldom bring over twelve cents per pound. The best breeds are Pekins, Rouens, and Aylesburys; or those breeds may be crossed on each other with advantage. The best time to hatch them is in April and May, so as to get them in market in June and July.

A duck of the improved breeds will lay from 120 to 160 eggs per year, and usually begins in February. If kept in the house until about eight o'clock in the morning, they will lay in the house, as they lay early in the morning, but if turned out too soon they sometimes deposit their eggs in

other places, and even on ponds. One drake to six ducks will be sufficient, and if young females are used, it is best to have a two-year old drake, though sometimes the eggs hatch well from parents of the same age on both sides, and less than a year old; but they should not be kept too fat, or the eggs will not hatch well. At Hammonton, N. J., this season, several thousand ducks (that had no water except to drink) were raised in brooders, and the same is done annually by Mr. James Rankin, of South Easton, Mass., who raises as many as 4000 a year. The great desiderata are good care, regular feeding, and dry quarters.

Compared with broilers, the prices, as reported in the New York markets, show that early in the season broilers bring as high as 65 cents per pound, though at that period no ducklings are sent to market.

The following table is a fair comparison of the prices of young ducks and chicks, dressed:—

	1891.		1892.	
	Ducks.	Chicks.	Ducks.	Chicks.
May 28th,	28	50	20	22
June 4th,	25	45	22	25
June 18th,	18	30	23	24
June 28th,	16	28	28	30

It will be observed the chicks are in the lead in the prices, but ducklings are sold when they weigh from *three* to *four* pounds each, while chicks must weigh, for the late months, over two pounds each, but it requires, on an average, three months for the chick to reach two pounds, while the duck arrives at that weight (averaging a number) in less than half that time, and is ready for market (weighing three pounds) in seven weeks, thus giving really a larger profit.

Of the breeds, a cross between the Pekin drake and Rouen female makes the best duckling, as it is white in color, like the Pekin, and has the hardiness of the Rouen. Both breeds are very large, and grow rapidly. The white color avoids pin feathers showing when the ducklings are dressed. They are never sold alive, as is the case with the adults. The Aylesbury is also an excellent white duck, and nearly as large as the Pekin, the two white breeds making an excellent cross. Always use males of the Pekin, Rouen, or Aylesbury when grading up a common flock. The White Muscovy drake and Pekin female is an excellent cross, giving a very compact carcass. Compared with chicks, the growth *forced* on high feeding, with a lot of ten ducklings and chicks, for experiment, with the same amount of food for producing one pound of flesh (usually a cost of five cents for each pound of carcass), we present the following:—

	Duckling.		Chick.	
	Pounds.	Ounces.	Pounds.	Ounces.
1 week old,	0	4	0	2
2 weeks old,	0	9	0	4
3 " "	1	0	0	6¼
4 " "	1	9	0	10
5 " "	2	2	0	14
6 " "	2	11	1	2½
7 " "	3	5	1	7½
8 " "	4	0	1	12
9 " "	4	8	2	0

As they approach maturity (after the eighth week) the ratio of gain begins to become proportionately less, while some were heavier than others. The ducks were kept in a small coop, and fed to demonstrate the highest point they could be made to attain, the pure-bred Pekins being used for experiment. The weight of chicks is taken from our May number.—*The Farm and Garden.*

PRACTICAL AND PITHY PARAGRAPHS ON POULTRY.

Selected from *The Farm and Garden.*

SUPERVISION.

It has been demonstrated, by repeated failures, that no one can delegate the duty of attending to poultry, but must do it himself. To secure a competent man to manage a large poultry farm is no easy matter, and a really competent assistant or manager will want something more than the ordinary monthly wages and board. Nearly all failures result from incompetency. To get together a large flock of hens, and put "a man" over them who is not only an inexperienced person, but below the average in intelligence, is ruinous to the prospects. It requires knowledge and intelligence to manage a large poultry farm, and quite a salary is required to secure the right kind of a manager, for they are scarce. Any person engaging in the poultry business must be sure and be on the ground at all times. He may have an assistant, and even a foreman and other help, but a single mistake may change a prospective profit to a loss, and hence the careful and watchful eye of the owner must be over the work, and he will even then find that no one can do what is required so well as himself, for disasters have been the results of many ventures.

QUARANTINE THE NEW COMERS.

Never bring a fowl from another yard and place it in your flock until you have kept it in quarantine. Provide a coop for that purpose, and place it at some distance from the yards, keeping the new birds confined long enough to know if they are healthy. The strictest precautions are necessary, or you will bring roup or cholera into your yards before you are aware of it. And, what is more, even if there is no disease, quarantine for fear of *lice*. Always be on the watch against lice, for should a lousy bird get into the yard it will soon stock the whole.

GETTING EGGS WHEN PRICES ARE HIGH.

We know well that in all branches of business there are those who take advantage of opportunities and seek the benefit of a rise in prices. In selling eggs or in procuring them, the matter of cost must be considered only in relation to the price. We can better afford to incur an expense of two dollars, in place of one, where the chances for profit are twice as great, than not to derive any profit at all. When eggs are well up in price, commanding over thirty cents per dozen, we may, by feeding properly, secure them. We can point to a poultryman who paid twelve cents a pound for fresh beef for his hens, when eggs were forty cents a dozen, and it paid him well. Just here, we will say to those who complain of receiving no eggs, to change the food by giving a goodly supply of meat once a day. A pound will supply twelve fowls, and, if they are kept warm, they will nearly always lay under a meat diet. A better plan is to chop a pound of meat, and add to it a quart of beans (after the beans have been cooked till they are soft), and thicken the mass with ground oats till it is of the consistency of dough. Feed this once a day to twenty-five hens, with whole grain at night, and the chances are they will lay in the coldest weather.

ARE ROOSTERS ALWAYS NECESSARY?

The general supposition is that there must always be a rooster in the flock, but this is not necessary unless the eggs are required for hatching purposes. An Illinois correspondent wants an opinion on the subject, and says:—

Does it make any difference whether you keep roosters with hens if the hens are only wanted for eggs alone? Some inform me that the hens will not lay as many eggs, while others say it makes no difference. I would like your opinion, or to hear from your readers thereon.

Laying is involuntary, and the hen has no control over it. If she is in the proper condition she will lay, and cannot avoid it. The male has no influence on the number of eggs, his functions being independent of the natural development of the eggs. Of course, eggs will not hatch if no

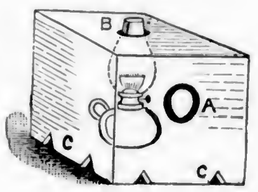
males are with the hens, but there will be just as many eggs laid when there is no male in the yards as when he is present. It is really an advantage to dispense with the males if eggs are to be kept any length of time. Eggs from hens not with males will keep three times as long as will those that have been fertilized.

HOW TO JUDGE OF FRESH EGGS.

A fresh egg is very clear when held up to a strong light, and the air cell at the large end is very small. In fact, the smaller the air cell, the fresher the egg, as the cell expands as the egg becomes stale. A fresh egg has a somewhat rough shell, while the shell of a stale egg is very smooth. When cooked, the contents of a fresh egg stick to the shell, and must be removed with the spoon, but a stale egg, when boiled hard, permits the shell to be peeled off like the skin of an orange. It takes a longer time to boil a fresh egg hard than it does a stale egg, and fresh eggs are more easily beaten into a froth than stale ones.

AN EGG TESTER.

Make a box about one foot square and the same in height, or, rather, about high enough for an inch of the globe of a lamp to come through the top, as shown at *B*, in the illustration. *A* is a hole the size of an egg, over which a piece of black cloth is fastened, and the hole also cut into the cloth, so as to fit snugly around the edges of the egg. *C C C C* are holes to let air into the lamp. Any kind of boards, or even pasteboard, will answer for making the tester. All that is necessary is to place the box over the lamp, as the box should have no bottom. Be careful to allow no light to show except at the opening where the egg is held. If preferred a bull's-eye lantern may be used instead of a lamp, as it magnifies the light. Hold the egg close to the opening, the large end up; look through it at the light, and after the eggs have been in the incubator or under the hen a week. Clear eggs are infertile; dark eggs contain chicks, unless rotten. Turn the eggs around from left to right, or *vice versa*, and the examination will be easier.



EGGS FOR HATCHING PURPOSES.

It is claimed that the influence of the union of the cock and hen remains until five days after separation, but it is safer to estimate for ten days. That is, if a cock is removed from a yard, and one of another breed substituted, the eggs, after ten days have elapsed, will produce chicks from the latest cock. If eggs are to be kept for a length of time, in order to wait until a hen wishes to sit, they will last over a month (and sometimes for two months) if they are kept in a cool place and turned half over once a day.

It is the settling of the yolk to the sides of the shell that injures them. Never use eggs from fat hens, or eggs that are double yolked, irregular in shape, or very small. Uniformity in the shape and size will insure a larger percentage of chicks.

THE BEST BREED FOR ALL PURPOSES.

A reader, who signs himself "Q," desires information on several points which may also interest others. Our correspondent writes:—

Will you please inform me which is the best variety of fowls for a man to keep who has only three acres of land, most all of it in lawn—say half an acre in garden, with no fence around it? He wants both fowl and eggs for table use.

The *best* breed has never been decided upon, as the best breed depends upon certain conditions. Each breed is best in its particular sphere. But let us look over our correspondent's letter, and see if we can assist him. First, what are the conditions? He has three acres of ground, mostly lawn, hence he has plenty of forage space; but the garden has *no fence* around it. Fowls and garden cannot be managed together. A fence is necessary, or the hens may destroy the garden. Next, he desires a fowl with market qualities (large) and which lays well. If he had wished to know which was the best breed for carcass and eggs, with the fence low, and but a small space for foraging, we would have recommended the Brahma, and if he had desired eggs, without regard to market qualities, we should have recommended the Leghorns or Minorcas as the best; but as he desires a good market fowl that lays well, and that forages over a wide space, we can safely say that either the Plymouth Rock or Wyandotte is the best, as there is but little difference between them in that respect.

CROSS-BRED FOWLS.

We believe there would be a good field for cross-bred birds if they were advertised. For instance, a cross of Minorcas with any of the large hens of the Asiatic breeds would be just what many want, as the pure Minorcas are high, and the cross is not easily obtained. Advertising cross-bred fowls is a common practice in England, and we see no reason why it should not be adopted here. A cross of Minorca and Brahma for eggs, or Dorking and Cochin or Brahma for chicks, with eggs sold by the hundred, would no doubt be acceptable to many.

A FEW HENS FOR FAMILY USE.

Every family has a few scraps to throw away daily, which the prowling dogs and cats secure. If such refuse be fed to hens, some return may be secured. If ten hens are expensive, reduce to five. Even a pair of hens will pay for themselves by giving a few eggs. With a family, the keeping of a few hens is almost costless, and it is not so much for the actual value of the eggs as for the securing of strictly *fresh* eggs that we recommend this practice. A large box, a corner in the cellar or woodhouse, or a small coop at the end of the yard, will entail but a small expense, and answer well for a family flock.

RATION FOR A FLOCK.

One quart of corn, or its equivalent, is estimated as the allowance for ten hens per day, but this quantity should be diminished when bulky food is fed. The estimate, however, will be no guide for feeding, as some hens will eat more and some less, but it is about the average quantity to be allowed. No person should attempt to feed fowls by any rule of measurement of the grain. The proper method is to feed very sparingly during the day, in order to keep them hungry enough to scratch, but at night feed them until they walk away satisfied, but feed carefully, so as to leave none, or but very little, on the ground. By so doing every hen will secure her share, as the stronger, or domineering, hens will keep the weaker ones back, but as soon as the stronger hens are satisfied they will leave, and the others can then eat all they wish. It will be found that on some days less food will be required than on others, and the quantity will be regulated by the breed. A dozen Brahma hens will eat more than the same number of Leghorns, while laying hens will eat more than those not producing eggs. Everything depends upon condition, shelter, breed, and kind of food given.

BUCKWHEAT AS FOOD.

Buckwheat is an excellent egg-producing food, but it is not always easy to obtain. Though more expensive than some kind of grains, per bushel, yet it is cheap, considering its value as an egg-producing food. The best way to feed it is to mix it with other grain food, or to feed it separately three times a week. Never give any kind of grain exclusively. If certain days could be given to corn, oats, wheat, and buckwheat, the hens would be better satisfied, and give results in laying that would surprise many who feed on one kind exclusively.

THE QUICK-GROWING BREEDS.

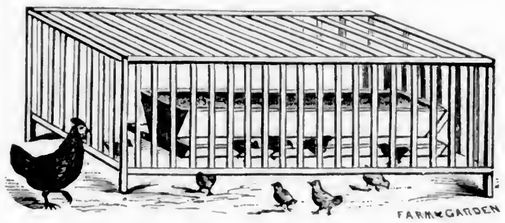
Do not hatch your Leghorns or Hamburgs until April. They will thrive much better than when hatched very early, and will have plenty of time to grow from April to November. If they are hatched in January, there is a possibility that they will moult late in the season, and thus lose time. But with the large breeds, hatching should be done as early as may be desired, as they require from eight to ten months to fully mature and be ready for laying by next fall. Now is the time to look out for next season's layers, especially for eggs in winter, as the early pullet begins early.

HOW TO USE GROUND MEAT AND BONE.

For growing chicks the best mode of feeding ground meat and bone is to fill up a little trough and place it where the chicks can go to it and eat whenever they so desire. The easiest way to raise chicks, and save labor, is to make a small coop of lath, just close enough to allow the chicks to run under, but which will prevent the adult fowls from getting at the food. The meat and bones, with plenty of wheat and cracked corn, may be placed under it. All that will then be necessary is to give the chicks a warm mess of soft food twice a day. This is intended for chicks that are large enough to be separated from the hen.

ARRANGEMENT FOR FEEDING CHICKS.

Make a coop four feet square, of lath or wire, and if preferred, it may be covered. Leave an opening at the lower part so chicks can run in and out, and keep a feed hopper full of feed in the coop all the time. The object is to have feed where the chicks can reach it at any time, but beyond the hens. It is an excellent contrivance for the yards that contain both hens and chicks, as the chicks will be in no danger of being interfered with by the larger fowls.



FEED FOR YOUNG CHICKS.

To properly feed young chicks the food must be of a kind to promote not only growth of the body, but of feathers, which drain the system if the chick feathers out rapidly, and they often droop from that cause, which accounts for slow-feathering chicks, such as young Brahmas, being hardier than other kinds. An excellent food for young chicks is to take one pound *each* of corn-meal, ground oats, bran, ship-stuff, and ground meat, four ounces ground bone, two ounces salt, two ounces bread soda, and half a pound of buckwheat meal. Mix with milk and bake as bread. If milk is not convenient, use curds, buttermilk, or warm water. Let it become cold, or stale, and crumble it for them. Feed the chicks five times daily. After they are ten days old, keep cracked corn and screenings before them all the time. Keep the chicks warm and dry. Give them free access to water, but put it in vessels that do not cause the chicks to get wet, not even on the feet. See that they are carefully housed for the night before leaving them.

"NO WATER FOR CHICKS."

The "no water for chicks" theory arose from the giving of chicks water to drink in vessels that caused them to get wet, and hence the claim was that the giving of water to young chicks is injurious, when, in fact, it was the dampness of the floor and the wetting of the down of the chicks that did the damage. Give chicks all the water they will drink, but give it in vessels so arranged that they can only get their beaks in the water.

DAMP RUNS.

Cut drains from the poultry yards and allow the surplus water to flow off, if you wish to avoid roup in your flock. Cold is, no doubt, very severe on flocks, but cold and dampness combined make it very difficult to keep the flock in health and laying condition. If the yards cannot be kept perfectly dry, they should at least be freed of the surplus water, which causes frosted feet and other ailments to the hens.

THE VALUE OF CLEANLINESS.

One-half the difficulties of poultry keeping may be avoided by cleanliness. Mr. Benjamin Alden, of Lawtey, Florida, writing on this subject, says: "We have occupied our present premises for almost three years. So far, we have found, by actual experience, that the only thing needful to keep poultry free from vermin of all descriptions is to keep the poultry house clean. The droppings are removed every morning as soon as the feeding is done—that is, they are swept through a trap door on the raised platform over which the fowls roost. They are received in a box beneath, outside the coop, and once in two weeks removed altogether."

HOW MUCH CORN FOR 100 HENS?

We have been asked how much corn should be given 100 hens a day, if they are running at large. We do not favor corn as a food for laying hens, but if given, it should be only at night. The amount required depends upon how much food of some other kind the fowls receive. Here is the way the calculation is usually made. Give each hen four and a half pecks of grain (mixed) a year. Now, four and a half pecks are 36 quarts. Hence, if one hen will eat 36 quarts of food in 365 days, it is equivalent to *about* one quart of food for ten hens. We would therefore suggest that if the hens are running at large, they be given a pint of grain at night for ten hens, provided they receive other food during the day.

A CHEAP LICE DESTROYER.

Get a bushel of lime, and let it air-slake. Sift it in a fine sifter, so as to have it like dust. Take a quart of the dust and pour a gill of carbolic acid over it, working the two together until they are thoroughly mingled. Then

mix the quart of lime and acid with the bulk of the lime. Carbolate of lime is formed by the mixture, and it is death to all insect life. Now dust the lime over the floor, on the walls, into the cracks, and *everywhere* that you can throw, dust, blow, or in any manner force it, and you will have a cheap and effective substance for preventing or driving off vermin.

GEESE AND DUCKS.

February is the month when ducks and geese begin to lay, but March is an excellent time to allow the geese to begin incubation, as the goslings will then come out in April. It is not advisable to hatch out young ducks until May, as July is the time they usually reach the market; but for those that are to reach a large size, April should be the month. There is no difficulty in raising young ducks or goslings, provided they are kept *dry*, and not allowed near the water until they are well feathered. The feed should consist of bulky matter, such as cooked turnips, potatoes, or carrots, to which a small quantity of bran and meal is added. Cut clover, steeped in hot water, is also excellent. Do not feed too much corn meal. A mixture of equal parts of bran, meal, ground oats, and shorts is better than any other ground food, and as they need animal food, do not omit meat at least three times per week.

BULKY FOOD FOR GEESE.

Geese will eat turnips if they are chopped into small pieces and placed in a trough of water, but it is more economical to cook the turnips, add a lot of chopped hay and ground grain, and feed warm. If coarse, bulky food could be provided for all classes of fowls, it would not only lessen the expense, but greatly assist in promoting their health and laying qualities.

DO WE PRODUCE TOO MUCH?

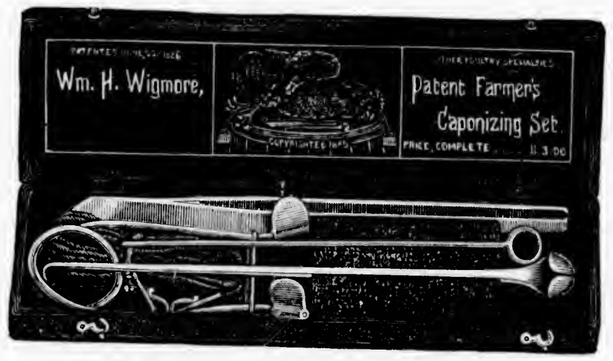
It is claimed that over 20,000 carloads of live and dressed poultry are sold in New York City annually, and also 25,000,000 dozen eggs. As 5,000,000 people buy in New York City, and the population of the United States is 50,000,000, we can form some idea of the consumption of poultry and eggs, which would be about 200,000 carloads of poultry and 250,000,000 dozens of eggs. Estimating the value of the eggs at ten cents per dozen, we have a product of $25,000,000 from eggs, and if each freight car carried 10,000 pounds, we have the great weight of 2,000,000,000 pounds, which, at five cents per pound, is $100,000,000, or a total of $125,000,000 as the product of poultry and eggs for the whole country, which is, in all probability, under the true figures as they would exist if a true census could be taken, which is, however, an impossibility.

BREEDING BY THE STANDARD.

All the established breeds of poultry are bred to a "standard," each breed being allowed a possible 100 points. These points differ according to the

breed, but encourage beauty of plumage and form rather than utility. The "standard," however, has preserved each breed in its purity by compelling the breeders to adhere closely to every little detail, but the choicest and most perfect birds may prove inferior layers, the "standard" recognizing the exterior qualifications only. It, however, encourages the development of prominence to the breast, breadth of back, and gives preference to weight in some breeds. But for the "standard," however, the Brahma would be absorbed in the Cochin, and the Langshan would lose its identity in a few years, while the other breeds would suffer correspondingly, due to the fact that all the breeds of poultry are subject to the constant crossing and in-breeding practiced so extensively by nearly all who keep fowls.

But the "standard," as in the case of the Leghorns, gives nearly one-third of the 100 points to the head, face, and legs of the birds (which are really the useless parts in a utilitarian sense), and devotes but a few to elevating the characteristics of the breed. The highest scoring fowls, therefore, may be only ornamental, yet it is in keeping close to the requirements of the "standard" that we have so many excellent breeds. The inherent and meritorious qualities of the majority of the breeds, such as the non-sitting peculiarity of the Leghorns, were fixed by careful selection before the "standard" was adopted. With the exception of a few poultry exhibitions, no premiums are offered for the encouragement of the production of carcass or eggs, nor for particular records of individual hens. This is due partially to the fact that but few farmers take an interest in the shows, or seek to encourage the breeding of the best varieties. The breeders of strictly pure breeds have, by rigidly adhering to the standard, prevented the destruction of some of the best varieties, and should be given credit for their work. For crossing the farmer needs no standard, but if he is going to use the pure breeds he should endeavor to secure standard birds, in order to make sure that they are all that he desires.



CAPONIZING INSTRUMENTS.

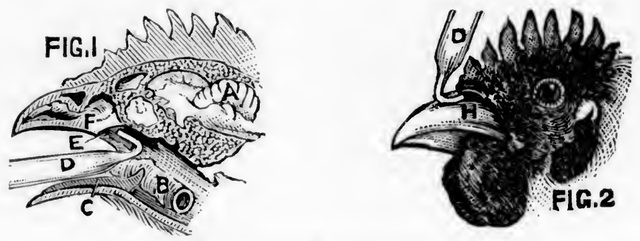
The set consists of one fine steel knife; one steel nickel-plated spreader, both well adapted for the purpose; one improved German-silver cutting and

twisting scoop, with fine hook on opposite end; one fine German-silver probe, and four German-silver hooks attached to cords for quickly securing the fowl; all in a fine velvet-lined case, sent to any address by mail, on receipt of price, $3.00.

Adjustable Distinguishing Bands.

ADJUSTABLE DISTINGUISHING BANDS.

For marking fowls. Numbered from 1 to 100, or with one, two, or three letters. Price 50 cents per dozen.



Poultry or Roop Syringe.

POULTRY OR ROOP SYRINGE.

For the cure of roop and its kindred diseases. Fig. 1 shows the internal application, and Fig. 2 the external. Price, with recipe, 25 cents.

French Poultry-Killing Knife.

FRENCH POULTRY-KILLING KNIFE.

The most expeditious and humane way of killing and dressing poultry is by the French method. These knives are of the finest steel. Price 50 cents each.

Bit to Prevent Feather Pulling.

BIT TO PREVENT FEATHER PULLING.

This bit does not interfere with the birds feeding. It keeps the bill far enough apart to prevent them catching the feathers. Price $1.00 per dozen.

GAPES EXTERMINATOR.

An instrument for removing the worms from the throat and windpipe of chickens; the gapes are almost sure death unless these worms are removed. The instrument is very simple and can be operated by a mere child. Price 25 cents, with instructions.

Aaron Bldg.

End of Title